

<http://researchspace.auckland.ac.nz>

*ResearchSpace@Auckland*

### **Copyright Statement**

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of this thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from their thesis.

To request permissions please use the Feedback form on our webpage.

<http://researchspace.auckland.ac.nz/feedback>

### **General copyright and disclaimer**

In addition to the above conditions, authors give their consent for the digital copy of their work to be used subject to the conditions specified on the [Library Thesis Consent Form](#) and [Deposit Licence](#).

THIRD PARTY PURCHASE:  
EFFECTIVENESS OF VALUE-ADDED  
SERVICES BY THIRD-PARTY LOGISTICS  
PROVIDERS

---

**YANGYAN SHI**

*A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of  
Philosophy,*

*The University of Auckland, 2013.*

## **Abstract**

Third-party logistics (3PL) has attracted the attention of many organizations in recent times. The increase in international trade and technological developments has significantly improved the commercial integration between countries. The globalization of supply chains enables many organizations to emphasize logistics as part of their corporate strategy. 3PL providers can play a crucial role in the outsourcing of logistics activities. Based on the latest report for 2013 third-party logistics by Langley and Capgemini (2013), the total revenue of the Asia-Pacific region was ranked No. 1 in 2011 among other regions in the world. Although the development of the logistics industry in the Asia-Pacific region is fast, there are still many challenges faced by the logistics providers. Most 3PL providers offer the basic services, but rarely perform value-added services. This research mainly focuses on New Zealand and the People's Republic of China because both countries have established close trading business relations, such as the Free Trade Agreement (NZ-China FTA).

The primary objective of this research is to evaluate third party purchase (3PP) as a value-added service offered by 3PL providers, based on transaction cost theory. Questionnaires and interviews are the two major research methods for this research. Structural equation modelling was used to test the hypothesized relationships. The qualitative data is qualitatively triangulated to explain the relationships through analysis by using Nvivo software. From the perspective of 3PL providers, this study illustrates that uncertainty, frequency, and transaction size, but not asset specificity, are significantly associated with 3PP service. From the perspective of 3PL users, the uncertainty factor is significantly related to 3PP service. In both countries, 3PP service is significantly associated with value-to-client and benefit-to-provider.

The primary contribution from this research is to help 3PL providers gain sustained competitive advantages through offering 3PP service. Also, the research illuminates that 3PL users are able to receive more benefits by using 3PP service. This paper also discusses the theoretical contribution and managerial implications of these findings. Future research can focus on other value-added services and geographical regions.

## **Acknowledgements**

I would like to express my profound gratitude to my supervisor Associate Professor Tiru Arthanari and my co-supervisor Professor Alan Stenger for strong support, reviews, praise, and guidance.

I would like to acknowledge the University of Auckland for offering the opportunity to conduct my doctoral research. I am truly convinced that I made the right choice to do research at the Department of Information Systems and Operations Management (ISOM) of the University of Auckland Business School. I would like to thank other scholars and colleagues in the department who have provided support and encouragement for my doctoral studies, primarily, Professor Michael Myers, Professor Tava Olsen, Associate Professor David Sundaram, Associate Professor David Robb, Dr. Valery Pavlov, Bill English, Dr. Anson Li, Gabrielle Murphy, Kamla Singh, and Josephine Lee. I am also grateful to the Postgraduate Research Office at the Business school for providing travel funds that enabled me to collect data in China and New Zealand for my research, and to present papers at international conferences. In addition, I would like to thank the Chartered Institute of Logistics & Transport (NZ) for providing Inspire Trust Funds to support my research.

I would like to acknowledge the other professional logistics and purchasing institutes which helped me collect survey data. I would like to thank the Centre for Supply Chain Management in New Zealand for supporting data collection. I would also like to thank Associate Professor Roger Liu who helped me contact the research participants. Moreover, many research participants gave me their valuable time to be interviewed and share their precious experience in supporting this research.

I would like to thank Professor Thomas Choi (Co-Editor-in-Chief, Journal of Operations Management) for reviewing one of the papers and giving valuable comments. I would also like to thank anonymous reviewers of the International Journal of Logistics Systems and Management, IEOM, ANZAM, APRU, ICOSCM, and POMS conferences for comments that contributed to the improvement of quality of the thesis.

I thank, gratefully, my friends and fellow PhD candidates for not just sharing research and conference experiences but also for helping make the PhD journey enjoyable. In particular, PhD students working with Tiru met weekly or fortnightly for sharing research experiences and collaboratively helping each other to solve research problems. During my PhD journey I benefited from interacting with Lincoln, Aman, Laleh, Dusan, Cameron, and Leila.

Last but not least, I am deeply grateful to my parents for enthusiasm and support. Thank you very much. Also, I appreciate my wife for her understanding and unfailing support during this period. Particularly, I would like to thank her for my new born baby to give me miracle power to start another milestone in my life.

## Table of Contents

Abstract .....	ii
Acknowledgements .....	iii
Table of Contents .....	v
List of Figures .....	xiii
List of Tables .....	xiv
Co-Authorship Form .....	xvii
Abbreviations .....	xix
Chapter 1 - Introduction .....	1
1.1 Importance of research in the Asia-Pacific region .....	1
1.2 Why research in China and New Zealand? .....	1
1.3 Logistics in China .....	2
1.4 Logistics in New Zealand .....	3
1.5 Use of 3PL service .....	4
1.6 Third-party purchase (3PP) service .....	5
1.6.1 Definition of 3PP service .....	5
1.6.2 Case for implementation of 3PP service .....	5
1.7 Research questions and objectives .....	7
1.8 Overview of the thesis .....	9
1.9 Publications from the thesis .....	10
Chapter 2 - Literature review .....	11
2.1 Transaction cost analysis (TCA) .....	11
2.1.1 Definition of transaction cost .....	11
2.1.2 Types of transaction cost .....	11
2.1.3 Determinants of transaction cost .....	12
2.1.3.1 Additional determinant variable .....	12
2.1.3.2 Discussion of TCA determinants .....	13

2.1.4 Governance structures.....	14
2.1.5 Outsourcing decision based on TCA .....	17
2.2 Group purchasing organization.....	18
2.2.1 Purchasing power.....	18
2.2.2 Group purchasing.....	19
2.2.3 Benefits of using GPO .....	21
2.2.4 Implementation of GPO .....	21
2.2.5 Success of GPO.....	22
2.2.6 Purchasing groups in supply chains .....	23
2.3 Third-party logistics and outsourcing .....	25
2.3.2 3PL services .....	25
2.3.3 3PL selection and decision.....	27
2.3.4 Expanding 3PL services.....	28
2.3.5 3PL in China .....	29
2.3.6 3PL in New Zealand .....	30
2.4 Drivers for 3PL usage .....	31
2.5 Third-party logistics users.....	32
2.5.1 Obstacles to SME's procurement.....	33
2.5.2 Supplier capabilities.....	34
2.5.3 Reasons to outsource logistics functions .....	34
2.5.4 3PL users in China .....	35
2.5.5 3PL users in New Zealand .....	35
2.6 Purchasing and supply management.....	36
2.7 Measuring benefits for 3PL providers and users .....	38
2.8 Chapter conclusion.....	39
Chapter 3 - Conceptual model and hypotheses.....	41
3.1 Research model.....	41

3.2 Hypotheses .....	42
3.3 Chapter conclusion.....	47
Chapter 4 - Methodology .....	48
4.1 Research philosophy .....	49
4.1.1 Positivist research .....	50
4.1.2 Interpretivist research.....	50
4.1.3 Critical Research .....	51
4.1.4 Philosophical approach to research.....	51
4.2 Research design .....	51
4.3 Selecting sample .....	52
4.3.1 Questionnaire sample.....	52
4.3.2 Interview sample .....	53
4.4 Research methods .....	54
4.4.1 Questionnaire .....	55
4.4.1.1 Questionnaire design.....	55
4.4.1.2 Drafting questionnaire .....	56
4.4.1.3 Pretest questionnaire .....	58
4.4.1.4 Delivering the questionnaire .....	59
4.4.2 Interviews.....	59
4.5 Data collection .....	60
4.5.1 Questionnaire .....	60
4.5.2 Interview .....	61
4.6 Analysing data .....	62
4.7 Chapter conclusion.....	63
Chapter 5 - Data analysis .....	64
5.1 Data analysis of data collected in China – 3PL providers and users .....	64
5.1.1 Quantitative data analysis– Questionnaires .....	67

5.1.1.1	Overview of respondent profiles – China 3PL providers and users	67
5.1.1.2	Measurement model – China 3PL providers .....	69
5.1.1.3	Structural equation model – China 3PL providers.....	74
5.1.1.4	Measurement model – China 3PL users .....	76
5.1.1.5	Structural equation model – China 3PL users.....	79
5.1.2	Qualitative data analysis – Interviews .....	81
5.1.2.1	Company profiles - China 3PL providers and users .....	81
5.1.2.2	Reliability and validity for qualitative data .....	90
5.1.2.3	Process of data analysis .....	91
5.1.2.4	Analysis of perceptions for China 3PL providers.....	94
5.1.2.5	Findings for China 3PL providers.....	103
5.1.2.6	Analysis of perceptions for China 3PL users.....	105
5.1.2.7	Findings for China 3PL users .....	113
5.2	Data analysis of data collected in New Zealand – 3PL providers and users ...	117
5.2.1	Quantitative data analysis – Questionnaires .....	117
5.2.1.1	Overview of respondent profiles – NZ 3PL providers and users...	120
5.2.1.2	Measurement model – NZ 3PL providers.....	122
5.2.1.3	Structural equation model – NZ 3PL providers.....	125
5.2.1.4	Measurement model – NZ 3PL users.....	127
5.2.1.5	Structural equation model – NZ 3PL users.....	130
5.2.2	Qualitative data analysis – Interviews .....	132
5.2.2.1	Company profiles – NZ 3PL providers and users.....	132
5.2.2.2	Reliability and validity for qualitative data .....	139
5.2.2.3	Process of data analysis .....	140
5.2.2.4	Analysis of perceptions for NZ 3PL providers .....	143
5.2.2.5	Findings for NZ 3PL providers.....	150
5.2.2.6	Analysis of perceptions for NZ 3PL users.....	153

5.2.2.7 Findings for NZ 3PL users.....	159
5.3 Chapter Conclusion.....	162
Chapter 6 - Discussion .....	163
6.1 Discussion of the findings from China data.....	164
6.1.1 Hypotheses discussion .....	164
6.1.1.1 Asset Specificity – China 3PL providers .....	164
6.1.1.2 Uncertainty – China 3PL providers .....	168
6.1.1.3 Frequency – China 3PL providers .....	172
6.1.1.4 Transaction size – China 3PL providers .....	175
6.1.1.5 Value-to-client and benefit-to-provider– China 3PL providers.....	178
6.1.1.6 Asset Specificity – China 3PL users .....	182
6.1.1.7 Uncertainty – China 3PL users .....	186
6.1.1.8 Frequency – China 3PL users .....	190
6.1.1.9 Transaction size – China 3PL users .....	194
6.1.1.10 Value-to-client and benefit-to-provider– China 3PL users.....	197
6.1.2 Strengths and limitations to offering 3PP services .....	202
6.1.2.1 Perceptions from China 3PL providers.....	202
6.1.2.2 Perceptions from China 3PL users.....	204
6.1.3 The ways to offer 3PP service .....	207
6.1.3.1 Perceptions from China 3PL providers.....	207
6.1.3.2 Perceptions from China 3PL users.....	209
6.1.3.3 Additional information related to offering 3PP service.....	211
6.1.4 Benefits of offering or using 3PP service .....	214
6.1.4.1 Value-to-client perceived by China 3PL providers .....	214
6.1.4.2 Benefit-to-provider perceived by China 3PL logistics providers ..	214
6.1.4.3 Value-to-client perceived by China 3PL users .....	215
6.1.4.4 Benefit-to-provider perceived by China 3PL users .....	215

6.1.5 Overall perceptions of implementation of 3PP service.....	217
6.1.5.1 Perceptions from the perspective of China 3PL providers .....	217
6.1.5.2 Perceptions from the perspective of China 3PL users .....	218
6.2 Discussion of the findings from New Zealand data.....	220
6.2.1 Hypotheses discussion .....	220
6.2.1.1 Asset specificity – NZ 3PL providers .....	220
6.2.1.2 Uncertainty – NZ 3PL providers.....	225
6.2.1.3 Frequency – NZ 3PL providers.....	228
6.2.1.4 Transaction size – NZ 3PL providers .....	230
6.2.1.5 Value-to-client and benefit-to-provider – NZ 3PL providers .....	233
6.2.1.6 Asset Specificity – NZ 3PL users .....	235
6.2.1.7 Uncertainty – NZ 3PL users .....	238
6.2.1.8 Frequency – NZ 3PL users .....	241
6.2.1.9 Transaction size – NZ 3PL users .....	243
6.2.1.10 Value-to-client and benefit-to-provider– NZ 3PL users .....	244
6.2.2 Strengths and limitations to offering 3PP services .....	248
6.2.2.1 Perceptions from NZ 3PL providers .....	248
6.2.2.2 Perceptions from NZ 3PL users .....	250
6.2.3 The ways to offer 3PP service .....	252
6.2.3.1 Perceptions from NZ 3PL providers .....	252
6.2.3.2 Perceptions from NZ 3PL users .....	254
6.2.3.3 Additional information related to offering 3PP service .....	255
6.2.4 Benefits of offering or using 3PP service .....	258
6.2.4.1 Value-to-client perceived by NZ 3PL providers.....	258
6.2.4.2 Benefit-to-provider perceived by NZ 3PL providers.....	258
6.2.4.3 Value-to-client perceived by NZ 3PL users.....	259
6.2.4.4 Benefit-to-provider perceived by NZ 3PL users.....	260

6.2.5 Overall perceptions of implementation of 3PP service.....	261
6.2.5.1 Perceptions from the perspective of NZ 3PL providers.....	261
6.2.5.2 Perceptions from the perspective of NZ 3PL users .....	262
6.3 Chapter Conclusion.....	264
6.3.1 Hypotheses .....	264
6.3.1.1 Asset specificity – 3PL providers .....	264
6.3.1.2 Uncertainty – 3PL providers .....	265
6.3.1.3 Frequency – 3PL providers .....	267
6.3.1.4 Transaction size – 3PL providers.....	267
6.3.1.5 Value-to-client and benefit-to-provider – 3PL providers .....	268
6.3.1.6 Asset specificity – 3PL users .....	269
6.3.1.7 Uncertainty – 3PL users.....	270
6.3.1.8 Frequency – 3PL users.....	271
6.3.1.9 Transaction size – 3PL users.....	271
6.3.1.10 Value-to-client and benefit-to-provider – 3PL users .....	272
6.3.2 Strengths and limitations to offering 3PP services .....	272
6.3.3 The ways to offer 3PP service .....	273
6.3.4 Benefits of offering or using 3PP service .....	275
6.3.5 Overall perceptions of implementation of 3PP service.....	275
Chapter 7- Conclusion .....	277
7.1 Summary of key findings.....	277
7.1.1 Research question one.....	277
7.1.2 Research question two .....	281
7.1.3 Research question three .....	282
7.1.4 Research question four.....	283
7.1.5 Research question five .....	284
7.2 Theoretical contribution.....	285

7.3 Managerial implications.....	286
7.4 Research limitations and future research .....	287
7.5 Final remarks .....	287
Appendix A - Survey question (English version) .....	289
Appendix B - Survey question (Chinese version).....	303
Appendix C - Interview question (English version) .....	314
Appendix D - Interview question (Chinese version) .....	318
Appendix E - Participant information sheet (English version).....	321
Appendix F - Participant information sheet (Chinese version) .....	323
Appendix G - Consent form (English version).....	325
Appendix H - Consent form (Chinese version) .....	326
Appendix I - SEM models .....	327
Appendix J - Tests of normality.....	329
References.....	331

## List of Figures

Figure 1-1: Framework for researching third party purchase .....	8
Figure 2-1: Governance structures based on TCA.....	14
Figure 2-2: Simple contractual schema.....	15
Figure 2-3: Purchasing consortium framework .....	20
Figure 2-4: The aspects of purchasing and supply management .....	37
Figure 3-1: Conceptual model for 3PP service (3PL providers).....	41
Figure 3-2: Conceptual model for 3PP service (3PL users) .....	42
Figure 4-1: Representation of research process .....	49
Figure 5-1: Structure equation model for China 3PL providers .....	75
Figure 5-2: Structural equation model for China 3PL users .....	80
Figure 5-3: Structural equation model for New Zealand 3PL providers .....	127
Figure 5-4: Structural equation model for New Zealand 3PL users .....	131
Figure 6-1: Conceptual diagram for implementation of 3PP service .....	274

## List of Tables

Table 2-1: Shippers' practice of freight logistics in New Zealand .....	30
Table 5-1: Non-response bias for the sample of China 3PL providers.....	65
Table 5-2: Non-response bias for the sample of China 3PL users.....	65
Table 5-3: Common-method variance for the sample of China 3PL providers.....	66
Table 5-4: Common-method variance for the sample of China 3PL users.....	66
Table 5-5: Company profile for Chinese firms .....	68
Table 5-6: Perceived levels of importance of logistics activities performed (China 3PL providers) or outsourced (China 3PL users) .....	68
Table 5-7: Exploratory factor analysis for China 3PL providers.....	70
Table 5-8: Cronbach's Alpha ( $\alpha$ ) and composite reliability for China 3PL providers	72
Table 5-9: Discriminant validity for China 3PL providers .....	73
Table 5-10: Hypothesized path testing for China 3PL data.....	75
Table 5-11: Exploratory factor analysis for China 3PL users.....	76
Table 5-12: Cronbach's Alpha ( $\alpha$ ) and composite reliability for China 3PL users .....	77
Table 5-13: Discriminant validity for China 3PL users.....	78
Table 5-14: Hypothesized path testing for China 3PL users .....	79
Table 5-15: Overview of respondent profile for China 3PL providers.....	81
Table 5-16: Overview of respondent profile for China 3PL users.....	86
Table 5-17: Examples of coding for China 3PL providers .....	92
Table 5-18: Examples of coding for China 3PL users .....	93
Table 5-19: Non-response bias for the sample of New Zealand 3PL providers .....	118
Table 5-20: Non-response bias for the sample of New Zealand 3PL users.....	118
Table 5-21: Common-method variance for the sample of New Zealand 3PL providers .....	119
Table 5-22: Common-method variance for the sample of New Zealand 3PL users..	119
Table 5-23: Company profile for New Zealand firms .....	121
Table 5-24: Perceived levels of importance of logistics activities performed (New Zealand 3PL providers) or outsourced (New Zealand 3PL users).....	121
Table 5-25: Exploratory factor analysis for New Zealand 3PL providers.....	123
Table 5-26: Cronbach's Alpha ( $\alpha$ ) and composite reliability for New Zealand 3PL providers .....	124
Table 5-27: Discriminant validity for New Zealand 3PL providers .....	125

Table 5-28: Hypothesized path testing for New Zealand 3PL providers.....	126
Table 5-29: Exploratory factor analysis for New Zealand 3PL users.....	128
Table 5-30: Cronbach’s Alpha ( $\alpha$ ) and composite reliability for New Zealand 3PL users .....	129
Table 5-31: Discriminant validity for New Zealand 3PL users .....	130
Table 5-32: Hypothesized path testing for New Zealand 3PL users .....	131
Table 5-33: Overview of respondent profile for New Zealand 3PL providers.....	132
Table 5-34: Overview of respondent profile for New Zealand 3PL users.....	137
Table 5-35: Examples of coding for New Zealand 3PL providers .....	141
Table 5-36: Examples of coding for New Zealand 3PL users .....	142
Table 6-1: Strengths for implementation of 3PP services perceived by China 3PL providers .....	202
Table 6-2: Limitations of implementation of 3PP services perceived by China 3PL providers .....	203
Table 6-3: Strengths for implementation of 3PP services by 3PL providers, perceived by China 3PL users .....	204
Table 6-4: Limitations on implementation of 3PP services perceived by China 3PL users .....	205
Table 6-5: Reasons that 3PL users will want to use 3PP services, perceived by China 3PL providers.....	212
Table 6-6: Criteria to assess the Request for Proposal (RfP) process perceived by China 3PL providers .....	212
Table 6-7: Influences for outsourcing purchasing decisions perceived by China 3PL users .....	213
Table 6-8: The importance of information obtained from the Request for Proposal (RfP) perceived by China 3PL users.....	213
Table 6-9: Strengths for implementation of 3PP services perceived by New Zealand 3PL providers.....	248
Table 6-10: Limitations of implementation of 3PP services perceived by New Zealand 3PL providers.....	249
Table 6-11: Strengths for implementation of 3PP services by 3PL providers, perceived by New Zealand 3PL users .....	250
Table 6-12: Limitations on implementation of 3PP services perceived by New Zealand 3PL users.....	251

Table 6-13: Reasons that 3PL users will want to use 3PP services, perceived by New Zealand 3PL providers.....	256
Table 6-14: Criteria to assess the Request for Proposal (RfP) process perceived by New Zealand 3PL providers .....	256
Table 6-15: Influences for outsourcing purchasing decisions perceived by New Zealand 3PL users.....	257
Table 6-16: The importance of information obtained from Request for Proposal (RfP) perceived by New Zealand 3PL users.....	257

# Co-Authorship Form



## Co-Authorship Form

Graduate Centre  
 Clock Tower – East Wing  
 22 Princes Street, Auckland  
 Phone: +64 9 373 7599 ext 81321  
 Fax: +64 9 373 7610  
 Email: [postgraduate@auckland.ac.nz](mailto:postgraduate@auckland.ac.nz)  
[www.postgrad.auckland.ac.nz](http://www.postgrad.auckland.ac.nz)

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in all copies of your thesis submitted for examination and library deposit (including digital deposit), following your thesis Abstract.

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Some portions of Chapters 1, 2, 3, and 4

Shi, Y., & Arthanari, T. (2011). Outsourcing purchasing service by third party logistics provider: a conceptual model. *International Journal of Logistics Systems and Management*, 10(4), 398-419.

Nature of contribution by PhD candidate:

Extent of contribution by PhD candidate (%):

### CO-AUTHORS

Name	Nature of Contribution
Tiru Arthanari	Reviewed the paper and suggested changes to publication

### Certification by Co-Authors

The undersigned hereby certify that:

- ❖ the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and
- ❖ in cases where the PhD candidate was the lead author of the work that the candidate wrote the text.

Name	Signature	Date
Yangyan Shi		19/03/2013
Tiru Arthanari		19/03/2013
		Click here

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in all copies of your thesis submitted for examination and library deposit (including digital deposit), following your thesis Abstract.

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Some portions of Chapters 5 and 6

Shi, Y., & Arthanari, T. (2012). Offering additional logistics outsourcing services by third party logistics providers. Paper presented at the proceedings of the 6<sup>th</sup> International Conference on Operations and Supply Chain Management & 9<sup>th</sup> International Conference on Supply Chain Management and Information Systems, Xi'an, China.

Nature of contribution by PhD candidate	Wrote the paper, incorporated the suggestions from the supervisor, presented the paper in the conference
Extent of contribution by PhD candidate (%)	60

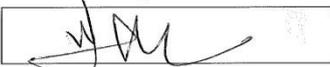
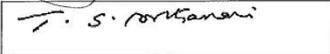
### CO-AUTHORS

Name	Nature of Contribution
Tiru Arthanari	Critically reviewed the writing and suggested changes to presentation

### Certification by Co-Authors

The undersigned hereby certify that:

- ❖ the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and
- ❖ in cases where the PhD candidate was the lead author of the work that the candidate wrote the text.

Name	Signature	Date
Yangyan Shi		19/03/2013
Tiru Arthanari		19/03/2013
		Click here

## Abbreviations

3PL	-	Third-party logistics
3PP	-	Third party purchase
B2C	-	Business-to-customer
B2B	-	Business-to-business
CFA	-	Confirmatory factor analysis
EFA	-	Exploratory factor analysis
ERP	-	Enterprise resource planning
GPO	-	Group purchasing organization
KPI	-	Key performance indicator
MRO	-	Maintenance, repair, and operations
P/O	-	Purchase/order
SEM	-	Structural equation modelling
SME	-	Small- and medium- sized enterprise
TCA	-	Transaction cost analysis
VMI	-	Vendor-managed inventory

## **Chapter 1 - Introduction**

Third-party logistics (3PL), also referred to as ‘logistics outsourcing’ or ‘contract logistics’, has been growing fast during the past decade. Africk and Calkins (1994) define 3PL as “a relationship between a shipper and a 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” (pp. 49-61). Modarress et al. (2010) point out that outsourcing logistics has expanded from traditional inbound or outbound logistics activities to include value-added services such as cross-docking, bar-coding/RFID, product returns, web-based applications, and logistics information services.

### **1.1 Importance of research in the Asia-Pacific region**

3PL providers continuously offer strategic and operational value to many customers throughout the world. Economic volatility and uncertainty significantly affect global business markets for 3PL services. Based on the report for 2013 third-party logistics by Langley and Capgemini (2013), the total global 3PL revenues for 2010 of US\$ 541.6 billion increased by 13.7% to US\$ 616.1 billion in 2011. The total revenue of the Asia-Pacific region for 2010 (US\$ 157.6 billion) was ranked second position following Europe (US\$ 165.1 billion). However, in 2011, the total revenue of the Asia-Pacific region was ranked No.1 among all regions, (including North America, Europe, Latin America, and other regions), which was US\$ 191.1 billion for Asia-Pacific, US\$160.4 billion for Europe, and US\$159.9 billion for North America. Based on this figure, the development of the 3PL industry in the Asia-Pacific region, as an emerging economic entity, plays an important role in the global 3PL industry. Thus, it is quite important to study 3PL providers and users in the region of Asia-Pacific.

### **1.2 Why research in China and New Zealand?**

This research focuses on 3PL providers and users in the People’s Republic of China (China) and New Zealand (NZ). China and New Zealand have 35 years of diplomatic relations (New Zealand Ministry of Foreign Affairs and Trade, 2013). The two countries have signed the Free Trade Agreement (NZ-China FTA) which entered into force on 1 October, 2008. New Zealand is the first developed country to negotiate a

free trade agreement with China (New Zealand Ministry of Foreign Affairs and Trade, 2013). Based on Statistics New Zealand (2012), China contributed 16 per cent of New Zealand's total import value in 2011. Exports to China, the second-largest market, were more than three times higher in 2011 than in 2006 (Statistics New Zealand, 2012). Presently, China has become the second most important trading partner to New Zealand. The logistics companies, as a bridge, closely connect both countries' relations and economy. Researching 3PL providers in both China and New Zealand would significantly benefit and contribute to bilateral trading and joint economic development.

The business environments for 3PL providers are quite different in the two countries. Many Chinese local 3PL providers are unaware of adding value to their services because they primarily consider offering only basic services. For New Zealand's 3PL providers, the level of usage of 3PL is quite low, (compared, for example, to that of the United States) (Sankaran et al., 2002).

### **1.3 Logistics in China**

Prior to the mid-1980s, China's production and distribution were both controlled solely on the dictates of the State Plan (Jiang and Prater, 2002). The central planners had a plan to indicate the volume of factory production and the whole distribution network within China was controlled strictly by the three-tier system (Jiang and Prater, 2002). Tier-1 distributors were located in Beijing, Shanghai, Tianjin, and Guangzhou; tier-2 distributors were located in each province's capital, and medium-sized cities, and tier-3 distributors were located in smaller cities and towns. The logistics providers in each tier focused mostly on transportation and warehousing.

Before China's entry into the World Trade Organization (WTO), foreign companies were severely restricted in providing logistics services in China (Brecher and Gelb, 1997). Today, China's distribution systems are based on a rigidly planned structure and a relatively open market system (Jiang and Prater, 2002). Jiang and Prater (2002) claim that there are three major types of obstacles in China's marketplace: unbalanced economic development, the particular relationships-'guanxi', and local protectionism.

The operations mode of China's 3PL providers is labour intensive. It depends on the input of a large number of service workers.

Currently, China is a global manufacturing centre that plays an important role in supply chains. However, as a developing country, China's logistics costs are almost double that of western countries (Tian et al., 2008). It is crucial that Chinese companies reduce their logistics costs. They realise that outsourcing some non-critical activities to 3PL providers could help them reduce their logistics costs (Lau and Wang, 2009). The benefits of outsourcing to 3PLs could include logistics cost reduction, improvement of core competence, and enhancing service quality (Wang et al., 2006). In fact, the logistics industry in China plays an increasingly important role contributing to China's global economic development. In 2011, the total expenditure on logistics in China was about Renminbi (RMB) 8.4 trillion, which represented 17.8 percent of China's gross domestic product (GDP) (China Federation of Logistics and Purchasing, 2011).

Chinese 3PL providers tend to provide a narrow range of basic services that significantly constrains their opportunities to offer differentiated services (Zhou et al., 2008). Many 3PL providers, focus on basic services such as transportation and warehousing, rather than on creating value for customers through service variety (Hong and Liu, 2007). Without offering other value-added services to differentiate themselves they are essentially left with pricing as their competitive weapon.

## **1.4 Logistics in New Zealand**

A formal survey researching on outsourcing in New Zealand is elusive. Sankaran et al. (2002) quote that one figure of outsourcing rate in New Zealand – the number of firms that outsource some parts of their logistics – was at 15 percent in 1999. This rate was much lower than in Europe (84 percent) and North America (69 percent). Another estimate of outsourcing in New Zealand comes from Elizabeth (2001). The author indicates, focusing on distribution, 11 percent of New Zealand businesses contract out their distribution. The market penetration for 3PL is relatively small in

New Zealand (NZBusiness, 2009; Sankaran et al. 2002). Actually, most companies cannot wake up to the benefits of outsourcing. “Kiwi companies feel the need to sit on top of their stock and be able to touch it” (NZBusiness, 2009, para. 16).

3PL market competition is quite fierce. Most companies choose to compete on price (Sankaran, 2000). The large transport companies, such as Mainfreight, are increasingly looking for value-adding service opportunities, rather than competing only on price (Grant, 1997).

Linfox Logistics, a division of Linfox Australia, is an example of a company which has been successful in creating value-added services in New Zealand. This company seeks to extend its service to customers, for example, by consolidating its distribution in the grocery sector. Linfox established the first site in New Zealand which primarily serves food and beverage clients (Kennedy, 1998).

### **1.5 Use of 3PL service**

3PL users (customers), such as small- and medium- sized enterprises (SMEs), may seek a third-party to handle their purchasing activities (Ellegaard, 2006). New Zealand Inland Revenue (2010) shows that there are 665,000 SMEs in New Zealand. SMEs produce about 37% of New Zealand’s total output of goods and services. Many local 3PL users are seeking a third-party purchase (3PP) provider to outsource their purchases activities to. However, they doubt the ability of their 3PL providers to meet the service levels they would require (Lambert et al., 1999).

With the Chinese logistics industry developing, many logistics users have realized that they need to shift from their in-house logistics departments to external logistics providers (Hong et al., 2004a). Most Chinese 3PL users are also struggling to obtain reasonable purchasing price due to a lack of sufficient purchasing power and volume. High purchasing cost would become a major barrier to expanding their businesses, which could lead to loss of competitive advantages (Sowinski, 2005).

Although there are some purchasing agents or consortiums in China, the challenge – to manage supplier networks, consolidate purchasing volumes, accurately transport

goods, and have stable and strong financial strengths—presents significant obstacles for them. Some of them cannot offer consistent and reliable purchasing services for their clients due to quality issues, purchasing price, delivery time, etc.

## **1.6 Third-party purchase (3PP) service**

### **1.6.1 Definition of 3PP service**

There is no formal and strict definition for 3PP service. In the broad sense, 3PP service means that a firm outsources its purchasing function to a third party (Xie and Zhang, 2008). Typically, with 3PP service, the firm outsources its non-critical purchasing items to a professional third party purchase company, taking full advantage of external resources, and minimising purchasing cost. Thus, the firm is enabled to focus on improving core competencies (Xie and Wu, 2007).

In this research, a 3PL provider plays a role of purchasing agent. In addition to the provider's primary services, such as domestic and international transportation, cross-regional distribution centres, advanced logistics technology, this research shows that the provider can augment these by adapting the format of group purchasing to implement 3PP service.

Group purchasing is form of 3PP arrangement based upon horizontal cooperation to increase the company's productivity for core activities and minimise the costs of non-core activities (Gruijssen et al., 2007). Building cooperative structure means putting together two or more purchasing companies at the same level of the supply chain in order to increase purchasing volume. From a transaction cost perspective, group purchasing can help companies reduce transaction costs (Coase, 1937).

### **1.6.2 Case for implementation of 3PP service**

There are no current 3PL providers to offer 3PP service in New Zealand. One of the interviewees in New Zealand stated that 3PP service occurred in the public service industry. However, the government controlled the purchasing department and regained the authority of purchasing.

The following paragraphs are the real case to implement 3PP service in China\* .

*“Currently, our company has provided a portion of purchasing services for nationwide Geely Motor 4S (Sale, Sparepart, Service and Survey) and Samsung laptop dealers. Our company receives the purchasing information from those dealers, and consolidates them together in order to place one large order to the manufacturers of Geely and Samsung. We pay the money on behalf of our clients. The ownership of products is controlled by our company. Then, those stores purchase their products from us, and we deliver their orders to them. Actually, we have signed two types of contracts with two parties. A store places a purchase order with us, and then we aggregate those small orders together and use bargaining power to get cheap purchasing price. The contract we signed has promised that the purchasing price is below the current market selling price. However, we do not actually pay for those products initially because we will return those products to Geely or Samsung if those stores do not want them. It could help us avoid the risk of purchasing and reduce our financial pressure. Geely and Samsung will pay us for additional logistics and administrative fees.”*

*“In fact, we provide two types of services. One is a financing service, and another is a purchasing service. The financing service is mainly for manufacturers. Take Geely as an example. Normally, when Geely produces products and needs one month to sell them to 4S dealers. Now, we will purchase its products once they are produced. Geely could be able to receive the money immediately. We are responsible for inventory management but we could increase purchasing price in order to cover the current inventory costs. In addition, those dealers could purchase their orders from us with lower than market price. The selling price to dealers would be a little higher than our purchase price because the gap of price would need to cover financing, inventory, administration, and human resource costs. The current profit margin is around 5% but the purchasing volume is very large, so the total profits are still very high. It is certain that they will use our transportation service when we help them purchase products. They will pay us for normal transportation services. However, it requires that the 3PL provider has very strong financial ability to implement this service. The*

---

\* The case is received from the interviewee's statement.

*current annual purchasing service expenditure has been around RMB 100 million for our company. Overall, 3PP services could be beneficial for three parties – manufacturer, dealer and 3PL provider.”*

*“In addition, in the buyer-driven market, manufacturers could probably send their products to dealers by using 3PL providers but the ownership of goods should belong to the manufacturers. 3PL providers could aggregate the demand information from dealers and share that information with manufacturers with a lower purchasing price promised. Dealers will pay money back to 3PL providers when the products are sold out. 3PL providers could pay settlement to manufacturers once a month and make sure the quality of operational and delivery processes could be guaranteed.”*

*“In contrast to the above scenario, the overall process could be changed in the supplier-driven market; the 3PL provider could pay the money to the manufacturer directly on behalf of those dealers. Dealers need to pay the money to us for those products since we have signed a contract with car manufacturers that those supplies could not be freely purchased in a market. The main purpose of this contract is to ensure minimal risk when offering purchasing service. Definitely, the purchasing price from us is less than the current market price. They will also use our logistics and other relevant services after purchasing.”*

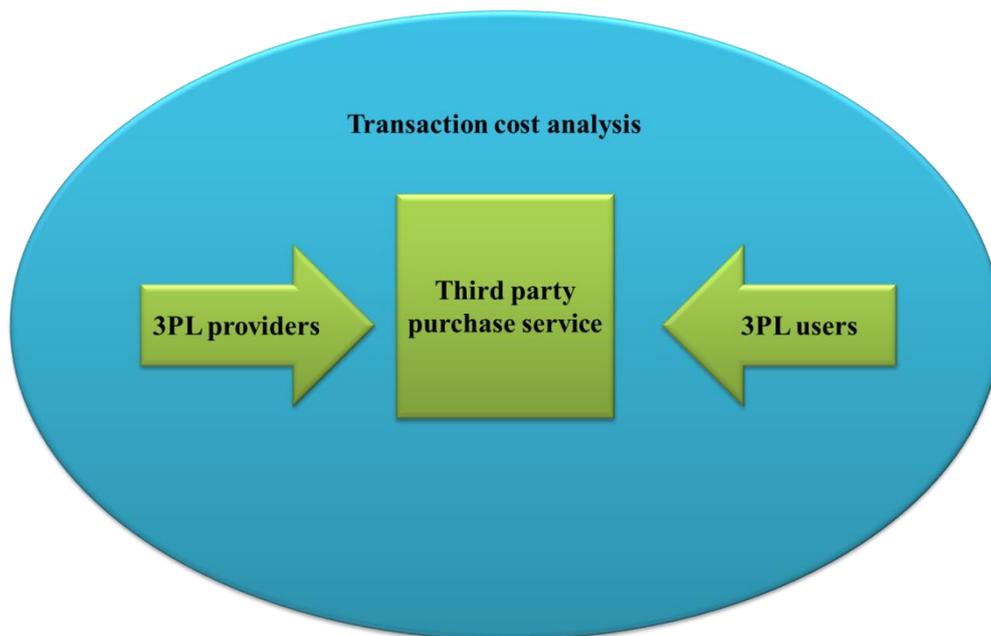
The case above describes the rudimentary implementation of 3PP service. This logistics company does not widely promote 3PP service in other industries. Also, most logistics providers may not include 3PP service in the current business practice. Thus, it is quite important to research the potential of 3PP service as a value-added service perceived by 3PL providers and users.

## **1.7 Research questions and objectives**

One of the major challenges for 3PL providers is related to incorporating value-added service offerings. Most 3PL users tend to expect 3PL providers to offer value-added services to satisfy their logistics needs. Although some 3PL users have some close relationships with global suppliers, they would find it difficult to source a suitable purchasing organisation that helps them obtain cheaper purchasing prices. It is critical

for the 3PL providers to understand what the 3PL users want and clearly reflect that in the contract. Otherwise, the outsourcing may result in loss of logistical control and downgrading of services.

The primary focus of this research is on the potential of third-party purchase as a value-added service offered by 3PL providers. Since they have many of the components, in place, necessary for inclusion of such service, such as a national distribution network, freight consolidation, advanced technology, and efficient management of transportation and warehousing functions, this research makes sense. The research also identifies whether 3PL users may want to use this service if 3PL providers are willing to offer such a service. This research mainly uses transaction cost theory to discuss third party purchase service from two perspectives: one from 3PL providers and the other from 3PL users (see figure 1-1).



**Figure 1-1: Framework for researching third party purchase**

There are five main research questions:

- What are the impacts of asset specificity, uncertainty, frequency and transaction size on the possibility of 3PL providers and users including third party purchase as a value-added service provided?
- What are the strengths and weaknesses of 3PL providers to implement third party purchase service?
- How do 3PL providers add third party purchase as a value-added service?
- What are the benefits for the 3PL providers if the third party purchase service is offered by them?
- What are the values for 3PL users if the third party purchase service is offered by 3PL providers?

## **1.8 Overview of the thesis**

The thesis consists of seven chapters. Chapter two reviews the literature regarding transaction cost analysis, group purchasing organizations, 3PL providers and users, purchasing and supply management, and measuring benefits for 3PL providers and users.

Chapter three focuses on conceptual models and hypotheses. This section describes the conceptual model for 3PP service and associated hypotheses based on transaction cost theory.

Chapter four shows the research methodology used for this research. This section deals with research methods, data collection, and data analysis.

Chapter five presents the data analysis, based on data collected from two countries (China and New Zealand). Different sub-sections will describe the quantitative and qualitative data analysis.

Chapter six discusses the findings of the research. This section also has two sub-sections based on two countries. It also summarizes the key points of findings from both countries.

Chapter seven gives a brief summary of the main findings, describes theoretical contributions, brings out managerial implications, indicates the research limitations, and identifies future research.

## 1.9 Publications from the thesis

The following publications have resulted from this study and are foundational to this thesis.

1. Shi, Y. (2010). The effect of taking advantage of expanding third-party logistics services on supply chains. Paper presented at the proceedings of *14<sup>th</sup> Annual Waikato Management School Student Research Conference*. Hamilton, New Zealand.
2. Shi, Y., & Arthanari, T. (2011). Outsourcing purchasing services by third-party logistics providers: a conceptual model. *International Journal of Logistics Systems and Management*, 10(4), 398-419.
3. Shi, Y., & Arthanari, T. (2011). Value-added services by third-party logistics providers. Paper presented at the proceedings of *The 2<sup>nd</sup> International Conference on Industrial Engineering and Operations Management (IEOM)*, Kuala Lumpur, Malaysia.
4. Shi, Y. (2011). Expanding third-party logistics services. Paper presented at the proceedings of *Association of Pacific Rim Universities (APRU) Doctoral Student Conference* organized by the University of Tsinghua, Beijing, China.
5. Shi, Y., & Arthanari, T. (2012). Outsourcing purchasing services offered by third-party logistics providers: empirical evidence from China and New Zealand. Paper presented at the proceedings of *10<sup>th</sup> ANZAM Operations, Supply Chain, and Service Management Symposium*, Melbourne, Australia.
6. Shi, Y., & Arthanari, T. (2012). Offering additional logistics outsourcing services by third-party logistics providers. Paper presented at the proceedings of *The 6<sup>th</sup> International Conference on Operations and Supply Chain Management (ICOSCM) & 9<sup>th</sup> International Conference on Supply Chain Management and Information Systems (SCMIS)*, Xi'an, China.
7. Shi, Y., & Arthanari, T. (2013). *Third-party purchase service*. Paper presented at the proceedings of the 2013 Production and Operation Management Society (POMS) Annual Conference, Denver, U.S.A.

## **Chapter 2 - Literature review**

This chapter mainly discusses the theory of transaction cost analysis (TCA), describes the concept of group purchasing organizations, reveals the current situation of 3PL providers and users, and indicates the literature gap.

### **2.1 Transaction cost analysis (TCA)**

In this section, the definition of transaction cost, types of transaction costs, determinants of transaction costs, governance structure, and outsourcing decision based on TCA are discussed.

#### **2.1.1 Definition of transaction cost**

Coase (1937), names transaction costs and analyses the two forms of governance structure (firms and markets). Coase's paper explains the origin of the firm and the function of the market.

Transaction costs are the cost of providing goods and services in a marketplace (Hobbs, 1996). The primary principle of transaction cost theory is that controlling a series of arrangements reduces the total of production and transaction costs between firms (Coase, 1937; Klein et al., 1978; Williamson, 1985).

#### **2.1.2 Types of transaction cost**

Commons (1965) indicates three categories of transactions. The first is negotiation between parties, such as bargaining associated with price and quantity. The second is the managerial transactions; employees may follow the regulations required by managers. The third is rationing transaction, which is the relationship between government and the individual.

Coase (1988) identifies three types of transaction costs: search and information costs; bargaining and decision costs; policing and enforcement costs.

### **2.1.3 Determinants of transaction cost**

Williamson (1975, 1985, 2008) discusses the three important variables that influence transactions: asset specificity, uncertainty, and frequency.

Asset specificity relies on the level of customization associated with the transaction. High asset specificity means that the costs have little value outside the transaction (McIvor, 2009). There are several types of asset specificities: physical asset specificity (level of product or service customization), human asset specificity (level of particular knowledge included in the transaction), or site specificity. Moreover, the specificity can be non-specific (highly standardized), idiosyncratic (highly customized to the organisation) or mixed (combined standardized and customized elements in the transaction) (McIvor, 2009).

Uncertainty refers to the level of predictability related to future events. There are two types of uncertainty: primary and secondary uncertainty. Primary uncertainty is the consequence of environmental uncertainty, which causes difficulty with modifying agreements to changing circumstances (Rindfleisch and Heide, 1997). Secondary uncertainty is a lack of communication, contractual uncertainty and information asymmetry (Williamson, 1985).

Transaction frequency refers to the number of transactions, where the number of transactions represents the total cost of transactions (Williamson, 1985; Ellram et al., 2008). This dimension addresses the target of “economizing on the sum of transaction costs” (Bienstock and Mentzer, 1999, p.43) and measures whether it is more efficient to ‘make’ or to ‘buy’. This dimension also represents the degree of asset utilization and deals with the issue of scale economy (Bienstock and Mentzer, 1999). As frequency increases, the fixed cost per transaction can be reduced. When asset specificity and uncertainty are lower, the transactions are fairly frequent and can be managed by the market (McIvor, 2009).

#### **2.1.3.1 Additional determinant variable**

Many TCA studies have an additional consideration. Transaction size is added as a control variable. According to TCA, the transaction size determines the economies of scale of transactions. Economies of scale have an impact on whether a product should

be made internally or purchased from the outside. Based on TCA, if an organization can purchase a standard product from a supplier who supplies similar items to other customers, the supplier is able to achieve the lowest material or product cost based on its total leverage (Ellram and Billington, 2001).

### **2.1.3.2 Discussion of TCA determinants**

TCA states that the potential of opportunistic behaviour is incurred when an exchange may require a party to invest in significant asset-specificity, because the investments create quasi-rents\* that result in the hold-up problem (Klein et al., 1978). “Relationship-specific investments include development of tailor-made designs and acquisition of firm-specific skills. Unless contracts are perfect, the specificity of these investments makes the investor vulnerable to ex-post exploitation” (Tore and Magnus, 2004, p.475). When asset specificity and uncertainty are lower, the transactions are fairly frequent and can be managed by the market. For medium levels of asset specificity, it is suitable to establish bilateral relationships with co-operative alliances between the organisations and intermediate governance (McIvor, 2009).

Williamson (1981) argues that the asset specificity variable may have more explanatory power compared with uncertainty and frequency. When asset specificity is high, the tendency is to choose firm governance, because the specific assets are costly to re-deploy in other uses. Many practical studies researching the impact of asset specificity on firm boundaries have supported Williamson’s view that high asset specificity may require high firm governance (Rindfleisch and Heide, 1997; Clark et al., 1996; Shelanski and Klein, 1995).

The frequency and size of transactions deals with the economies of scale of transactions (Verwaal and Donkers, 2003). The purpose is that the costs of transaction-specific investments can “be easier to recover for large transactions of a recurring kind” (Williamson, 1985, p. 60).

---

\* Transaction cost commences with the assumption that “market transactions are plagued by incomplete contracts and the development of lock-in among trading partners. Lock-in leads the value of the relationship to exceed the value of trading partners’ outside alternatives creating quasi-rents” (Whinston, 2001, p. 184).

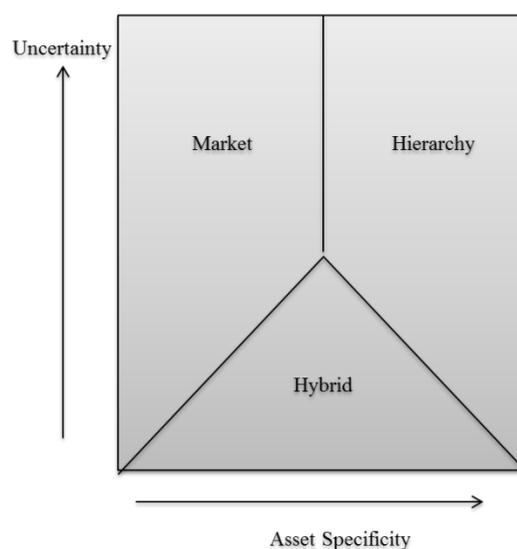
### 2.1.4 Governance structures

Van Hoek (2000) introduces three key variables to determine the choice of a governance structure:

- The market environment of transactions, in particular uncertainty
- The transaction specificity
- The frequency of transaction

If asset specificity is high, it is favourable to integrate transactions under hierarchy and avoid the risk of overdependence on outside suppliers. However, in terms of low asset specificity, externalizing the transaction into the market is favourable. It can contract out to the most efficient suppliers.

The traditional transaction theory (market versus hierarchy) has been criticized. One of the crucial points is the ‘in between’ situation based on the middle degree of specificity in which neither market nor hierarchy can rely on marginal costs (Arnold, 1996). The hybrid form (figure 2-1) is incurred when asset specificity is moderate. It is neutral between two extreme situations when uncertainty is low to medium. Outsourcing may be incurred in this context. Additional safeguards, contract details, and avoiding risks associated with asset specificity are required (van Hoek, 2000).

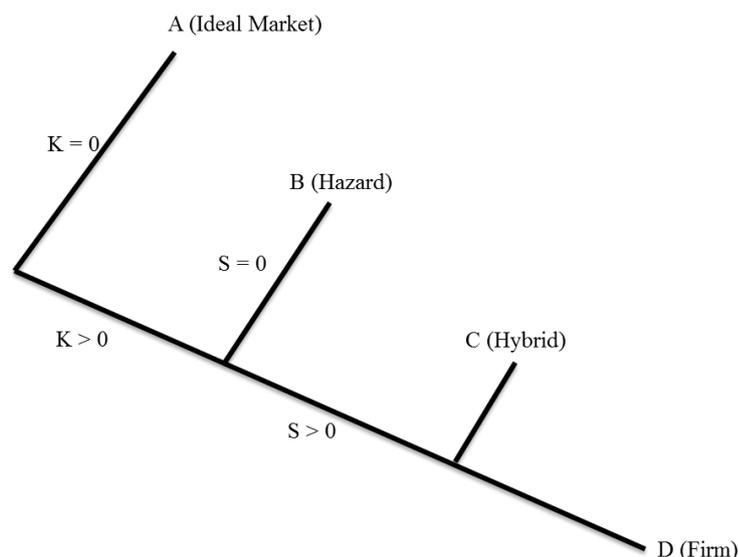


**Figure 2-1: Governance structures based on TCA**

*Source: (van Hoek, 2000)*

Transaction cost analysis, with its consideration of governance strategies (Williamson, 1975), provides a good conceptual framework to analyse the efficiency of governing a firm's purchasing of goods internally or externally.

The figure below (see figure 2-2) is an illustration from Williamson (1999), assuming the operation of outsourcing procurement. If the operation is generic ( $K=0$ ), outsourcing in the market (A) is the best option. If the operation requires transaction specific investments ( $K>0$ ), it is not easy to be redeployed to another user without a loss of production value or investment (van Hoek, 2000). It reveals the dependency relationships between supplier and buyer when security is absent ( $S=0$ ). "Such hazards will be recognized by farsighted players, who will price out the implied risks" (Williamson, 2008, p. 9). When the market is safeguarded by contracts ( $S>0$ ), the transaction can be incurred within a hybrid market environment (C, outsourcing with mutual dependency). The contract can limit the transactional relationships with a lot of clauses and conditions. As a result, the buyer is in a position to take legal action and force the supplier to comply with the contractually agreed performance. Alternatively, the buyer instead improves administrative safeguards, and decides to internalize the transaction within the firm (D) (Van Hoek, 2000; Williamson, 2008).



**Figure 2-2: Simple contractual schema**

*Source: (Williamson, 1999)*

Bounded rationality is assumed “intensely rational, but only limitedly so” (Simon, 1961, p. xxiv). Williamson (1975) describes the two components of bounded rationality: neurophysiological limits and language limits. The physical limits are that people are hard to collect completed information and forecast the direction of potential threats. Language limits refer to the inability of an individual to present knowledge by using words, numbers or graphics. Comprehensive contracting is not reality while people have bounded rationality (Radner, 1968). In fact, it is hard to draft all possible situations into a contract because of bounded rationality. The potential of opportunistic behaviours may be incurred when the safeguard (contract) is not perfectly to cover all possible scenarios leading to the opportunism. Search costs are created when opportunistic behaviour, bounded rationality, and asset specificity are combined. A firm is not able to know how a potential trading part will behave in a situation where bilateral dependency caused by the need for specific assets requires that the firm investigates the potential partner (Leonard, 2013). The associated gathering information would be costly.

Contracting costs consist of the costs related to negotiating and creating a contract for goods or services between the two trading partners. Such contracts may be complex, but they are never fully comprehensive. Contracting costs may be occurred when uncertainty and bounded rationality are combined with opportunistic behaviour. In fact, a manager cannot completely know about either the future or the possible trading partners’ behaviours, but a contract has to be created and the associated transaction cost is occurred (Leonard, 2013). In addition, the more specific assets required to complete the transaction, the greater the risk of opportunistic behaviour, and the more complex the contract has to be.

When few trading partners exist for a transaction, it may result in a need for transaction specific assets. The associated contract costs may increase since the transaction may be shifted to the benefit of the trading partner. If the number of trading partners reduces to one, the firm needs to be protected against uncertainty and opportunistic behaviour performed by the trading partners, through using the complex contract (Leonard, 2013).

### **2.1.5 Outsourcing decision based on TCA**

According to transaction cost analysis (TCA, also referred to as transaction cost economics), the shift has been away from ‘make’ or ‘buy’ (Williamson, 1975, 1985). “Any rise in transaction cost is theoretically offset by the benefits of supply chain management in terms of some combination of lower production costs and adding value” (Smyth, 2005, p. 35).

To decide on which business function can be performed internally or contracted out externally, TCA should identify what is needed to constitute ‘a firm’, and what relations will be maintained between firms (Coase 1937; Williamson 1975). Whether to perform internally or outsource depends on whether a firm performs a function within the boundaries of the firm, or establishes an agreement with other firms to perform the function (Bienstock and Mentzer, 1999).

Firms usually outperform markets in performing the same function (Coase, 1988). Coase (1988) claims that transactions within the boundary of the firm are easier than those of the marketplace. For instance, a long-term contract between firms can reduce the cost of policing and enforcement incurred by the market. The boundary of firm expands until “the cost of organizing an extra transaction within the firm becomes equal to the cost of carrying out the same transaction by means of an exchange on the open market” (Coase, 1988, p. 44). Therefore, when marginal costs of using the market (transaction costs) are higher than the cost of using the firm (management costs), the transaction should be governed within the firm and vice versa (Coase, 1937).

Organisations can determine outsourcing through evaluating the performance achievement in the areas of cost, service and quality. TCA provides a powerful theoretical lens to argue this analysis. Moreover, TCA improves the understanding of whether it is more appropriate to insource or outsource activities (Stratman, 2008; Grover and Malhotra, 2003; Holcomb and Hitt, 2007). TCA can be used as a theoretical basis for analysing market versus hierarchical mechanism in the outsourcing decision.

## **2.2 Group purchasing organization**

It is assumed in this research that the most likely format, for a 3PL wanting to provide purchasing services would be to adapt a group purchasing format; i.e. one that would embody the concepts employed by a group purchasing organization (GPO). Purchasing power, group purchasing, benefits of using group purchasing organization, implementation of group purchasing organization, success of group purchasing organization, and purchasing group in supply chains will be primarily discussed.

### **2.2.1 Purchasing power**

Porter (1985) defines the power of buyers:

“The power of buyers determines the extent to which they retain most of the value created for themselves, leaving firms in an industry only modest returns.”  
(p. 9)

Actually, purchasing power is an important determinant of organisational profitability. When a supplier's product specifications and a buyer's purchases can be matched to a satisfactory level, the buyer's external resources can be transformed into a desire to purchase from a specific supplier and, simultaneously, a supplier's external resources can be transformed into a desire to sell to a particular customer (Ramsay, 1994). Mutual satisfaction of those desires is established and determined through the medium of bargaining activity between buyers and sellers through negotiation skills. The terms of exchanges of resources, associated costs, and profits can then be accepted (Ramsay, 1994).

Buyers may own purchasing power if they are able to create desired changes in supplier behaviour. Assume that a buyer may want to get a product that the supplier offers, and the supplier is also interested in dealing with the buyer. If they have an agreement to exchange resources, the supplier may offer the price that the buyer believes is 20% higher than expected. Although the supplier may not want to offer a lower price, he/she may be prepared to accept a 10% reduction if the sales volume is quite large. One could argue that the buyer has the potential purchasing power in this situation. It makes a supplier reduce the selling price. If the assumption is correct, the buyer may have successfully exercised purchasing power (Ramsay, 1994). However,

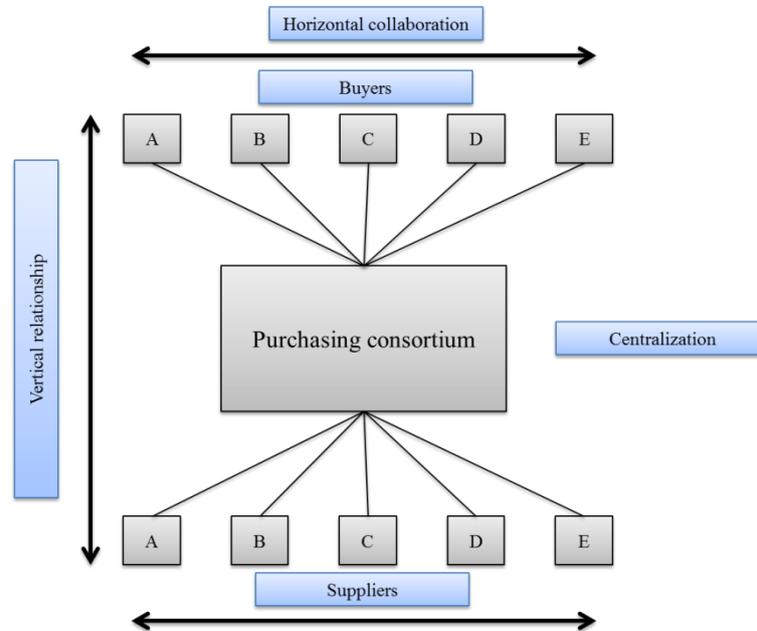
if the buyer fails to influence the selling price, it poses an interesting question about the nature of the buyer's power (Ramsay, 1994).

There are some working definitions of power in buyer-supplier relations: 1) Potential purchasing power is "the potential capacity of a buyer to produce intended changes in a supplier's product specification ... incur increased supplier costs without increasing buyer costs" (Ramsay, 1994, p. 128). 2) Actual purchasing power is "the ability of a buyer to produce intended changes in a supplier's specification ... incur increased supplier costs without increasing buyer costs" (Ramsay, 1994, p. 128). 3) Potential selling power is "the potential capacity of a supplier to produce intended changes in a buyer's purchase specification... incur increased buyer costs without increasing supplier costs" (Ramsay, 1994, p. 128). 4) Actually selling power is "the ability of a supplier to produce intended changes in a buyer's purchase specification... incur increased buyer costs without increasing supplier costs" (Ramsay, 1994, p. 128).

### **2.2.2 Group purchasing**

Purchasing in small and intensive groups has become popular in the public sector (Polychronakis and syntetos, 2007; Tella and Virolainen, 2005; Dobler, 1965). Many organisations would like to share their purchasing volumes, information and resources in purchasing groups. In the literature, terms such as horizontal cooperative purchasing and consortium purchasing refer to the concept of purchasing in a group (Schotanus et al., 2009).

Group purchasing organisations (GPOs) play an important role in the provision of health care services in the United States. Another frequent term is 'cooperative purchasing', which refers to cooperation in the public sector (Cavinato, 1984). Cooperation between industrial companies is called 'consortium purchasing' (Macie, 1996). 'Consortium purchasing' is "horizontal cooperation between independent organisations that pool their purchases in order to achieve various benefits" (Tella & Virolainen, 2005, p. 162).



**Figure 2-3: Purchasing consortium framework**

*Source: (Tella and Virolainen, 2005)*

Consortium members need to build up a cooperative structure in order to introduce consortium sourcing. The procurement function of two (or more) firms at the same level of the supply chain has to be combined to increase their purchasing volume. The consortium is only successful when the corporative structure has synergy (Figure 2-3).

Consortium sourcing helps reduce transaction costs (Coase, 1937). According to transaction cost theory, purchasing cooperation may be necessary in hybrid institutions. The fundamental idea of TCA is that cooperation exists because of the use of markets or the price mechanism to resolve transaction imbalances (Tella and Virolainen, 2005). If the market is fluctuating due to moderate or high uncertainty, the purchasing firm may not want to integrate vertically (Tella and Virolainen, 2005). Therefore, a form of cooperation is necessary. There is a wide range of various hybrid institutions between the market and hierarchy. On the one hand, the consortium members still want to have their own division, such as manufacturing, marketing, R&D etc. This depends on the coordination by the market. On the other hand, they may prefer to combine their purchasing power by means of hierarchical steering (Ebig, 1999). Therefore, the total transaction costs of the participated group members are lower when they work together (Williamson, 1991).

### **2.2.3 Benefits of using GPO**

There are some benefits to using GPO. First, the number of transactions may go down: for instance, where five buying companies cooperate with four suppliers. Assuming there is no consortium, they may need  $(5 \times 4 = 20)$  buying transactions; by using a consortium, they only need  $(5 + 4 = 9)$  transactions.

Second, it may form a new governance structure. Based on Williamson (1985), such cooperation forms a type of hybrid institution which combines market and hierarchy structures. Those collaborating companies still have their own manufacturing, marketing, etc (market-based relationship), but they may combine their power of procurement (hierarchical steering). Symbiotic relationships can co-exist in the hybrid institution.

Third, consortium sourcing may provide a common benefit to the members, like lowering purchase prices and using resources more efficiently (Essig, 2000). Moreover, supply managers also need to consider sub-strategies in order to align with the corporate purchasing strategy, such as 'supplier sub-strategy', 'area sub-strategy', 'time sub-strategy', etc. There are some options for supplier sub-strategies, which refer to the number of suppliers: sole sourcing, single sourcing, and multiple sourcing. Single sourcing means that only one supplier is responsible for supplying and delivering products. Sole sourcing occurs when a buyer is forced to purchase from one supplier in a monopolistic situation. Multiple sourcing means that many suppliers are responsible for providing and distributing products (Essig, 2000).

### **2.2.4 Implementation of GPO**

Carter et al. (2000) forecast that the use of purchasing groups will spread over the next few years. The competitive environment forces many firms to re-check their purchasing strategies and the practices that generate additional savings. Some procurement managers explore the potential of purchasing groups to increase the power of their negotiation with suppliers (Nollet & Beaulieu, 2005). Nollet and Beaulieu (2005) define a purchasing group as a formal or virtual structure that helps the consolidation of purchases for many organisations. The consolidation is used to transfer activities, such as, bidding, supplier evaluation, negotiation, and contract management to a central entity. There are two types of structures for a purchasing

group. One is the corporative structure, where the purchase to be performed by the group is distributed among the group members. Another is the third party structure, where there is a particular organisation negotiating and forming contracts according to a command given by the group members (Hendrick, 1997). The intermediary may influence both upstream and downstream buyers (Burns, 2002).

The basic purpose of GPOs is to allow their members to join together and to leverage their purchasing strength in order to buy goods and services at lower prices. For example, healthcare is an appropriate choice since purchasing groups have been used in the public sector (Essig, 2000). For instance, many countries, like UK and New Zealand, re-form to allocate resources efficiently, and respond to the consumers' preferences quickly. The classical National Health Services in UK and New Zealand is a separation between the buyer and provider of health care, which is the essential element of the reformations. However, other countries (e.g. US and Netherlands) place an emphasis on the market for third party purchasing of health care. Integrated providers and purchasers in organisations, such as Health Maintenance Organisations, and Preferred Provider Organisations, establish suitable incentives for the third-party providers to be efficient, innovative and responsive to the customer's preferences.

### **2.2.5 Success of GPO**

Hoffmann and Schlosser (2001) state that all past studies face the same problem in assessing the success of groups of organisational arrangements, such as alliances. Some studies note that the alliance's contribution may ameliorate the strategic position (Hagedoorn and Schakenraad, 1994; Kogut, 1988). Successful cooperative organisations may need to consider a benchmark for cooperation decisions (Sarkar et al., 2001), such as financial, ownership stability and so forth. However, Schotanus et al. (2009) believe that longevity, survival and ownership stability may not apply for a young purchasing group. The success of the purchasing group is decided by the perceived level of success in meeting the objectives of the purchasing group (including the 'hard' and 'soft' objectives of the group) (Schotanus et al., 2009).

In addition, inter-organisational trust may become one of the success factors for group purchasing (Vanegn & Huxham, 2003). The importance of competence, goodwill, and trust are confirmed in cooperative relationships. Trust is an important factor for the

success of a purchasing group and is also related to the behavioural assumptions of TCA (Schotanus et al., 2009). Transaction costs are supposed to be lower when trust exists because the organisation needs less monitoring and control. Establishing cooperative agreements may reduce uncertainty, chances of conflicts, and associated costs although the bargaining and enforcement costs increase due to establishing additional agreements (Hennart, 1991).

Efficient and effective communication is considered to be a success factor for a purchasing group. Hoegl and Wagner (2005) find that communication frequency has a significant influence on the performance of the group. Laing and Cotton (1997) indicate that cooperative purchasing may lead to communication issues for new cooperative projects. In terms of too little communication, the overall transaction costs of the group may be higher than the sum of costs of all members working alone (Schotanus et al., 2009).

### **2.2.6 Purchasing groups in supply chains**

From a supply chain perspective, the use of a purchasing group (also called third party purchase) often changes the relationships within a supply chain by introducing an additional player (Burns, 2002; Young, 1989). The close collaboration may bring a major problem in that information available to rivals who are also in the same group may be of a strategic nature (Hendrick, 1997). 3PP usually provides additional power to the members of the group in the negotiation with suppliers. As a result, members should get more favourable benefits than those who conduct their activities individually (Rozemeijer, 2000). 3PP may impact both upstream and downstream players in a supply chain (Burns, 2002). It also provides an additional link in the supply chain, which increases the distance between purchasers and sellers (Fenstermacher & Zeng, 2000).

Anderson and Katz (1998) identify three types of benefits generated by 3PP: price, administrative costs, and utilisation costs. In terms of prices, 3PP may generate savings of between 10% and 15% (Schneller, 2000). According to the research conducted by Schneller (2000), the reduction of administrative costs will save 40%. Chapman et al. (1998) insist that the purchasing group is able to reduce utilisation costs. Tyndall et al. (1998) point out that standardisation in supply strategy aims at

reducing utilisation costs. In the long term, 3PP generally produces additional savings. In terms of negotiating power and its ability to reduce price, the purchasing group may require some suppliers to leave a market or merge/acquire other suppliers. In order to alleviate the unexpected impact of mergers and acquisitions among suppliers, the purchasing group should monitor market activities (Nollet & Beaulieu, 2005).

However, Nollet and Beaulieu (2005) reveal that the purchasing groups may focus on price rather than service, so most suppliers have focused on all perspectives for lowering their costs. The entry barrier to new suppliers may be high due to the strength of purchasing group (Zweig & Zellner, 1998).

Looking at the characteristics of the group members, 3PP might accept members who focus on the same market. A potential risk may appear that some strategic information may be received by competitors (Hendrick, 1997).

3PP can also provide opportunities to meet other purchasing groups in the same areas and to discuss the issues raised. Homogeneity among their interests helps to provide the appropriate platform for the discussions. Therefore, 3PP members are required to have relatively homogenous characteristics and preferably similar objectives. Moreover, it is realized that effective purchasing should depend upon effective internal communication between all partners within the buying centre. Although most members recognize the importance, the consortium may fail to manage communication effectively (Laing & Cotton, 1997).

Schotanus et al. (2009) point out the disadvantages of cooperative purchasing, such as anti-trust issues and disclosure of sensitive information to third parties.

## **2.3 Third-party logistics and outsourcing**

Third-party logistics (3PL) involves “the use of external companies to perform some or all of the firm’s logistics activities” (Bhatnagar et al., 1999, p. 571). A key rationale for outsourcing is that firms are focusing on their core competence, and leaving the rest of their activities to other professional firms.

The decision to outsource is a variant of the make/buy decision. Firms can either have their own logistics divisions, or they can contract out the logistics functions (Sheffi, 1990, Amaral et al., 2006). The first step in a make-or-buy decision includes a comparison of in-house costs to outsourcing costs (Cavinato, 1991). Other factors should be considered as well, such as quality, labour, capacity, scheduling, and skill (Heinritz et al., 1991). The user firm may measure the benefits of outsourcing, like return on assets (Trunick, 1989). Contract logistics allow users to minimize capital investment in facilities (Foster and Muller, 1990), information technology (Trunick, 1989), and manpower (Richardson, 1992).

Fuller et al. (1993) advise that one crucial reason for the growth of 3PL services is that 3PL providers can provide distinct services for customers based on their different needs. A variety of options for clients can be offered from narrow service (limited to particular services, like transportation) to broad service (including most activities in the whole supply chain).

SMEs are interested in third-party use (Maltz, 1994) because their need for expertise and assistance in the area of technology is greater than larger firms (Harrington, 1995). Nonetheless, they deem logistics as a profit centre, not a cost centre, so outsourcing usually becomes a potential source of sustained competitive advantages.

### **2.3.2 3PL services**

3PL services can be divided into three homogenous classifications. First, transactional 3PL services are generally those basic logistics functions that do not include any specific requirements. Such services include basic transportation and warehousing. Second, value-added 3PL services include some or all of the basic services, as well as some customised functions, such as cross docking. Third, fully customised 3PL services require more cooperation and coordination to be successful, which means it

is desirable that close partnerships are built between the 3PL providers and their clients. Fully customised services include the final assembly of the product and information technology service (Clements and Wilson, 2009).

Rabinovich (1999) identifies several significant outsourcing functions: transportation, warehousing, freight consolidation and distribution, product marking, labelling, and packaging, inventory management, traffic management and fleet operations, freight payments and auditing, cross docking, product returns, order management, packaging, carrier selection, rate negotiation, and logistics information systems.

Lieb and Bentz (2005) notice that the most frequently cited services are transportation, warehousing, freight consolidation and distribution, inventory management, freight payments and auditing, information technology, order picking and packaging.

Lieb et al. (1993) identify several key factors affecting the usage of 3PL providers: level of commitments to the use of 3PLs, proportion of logistics budget assigned to 3PLs, geographical coverage conducted by 3PLs (domestic versus international), and the length of 3PL contracts. Hindson (2007) states that increasing logistics costs, international sourcing and production, combined with use of forecasting and planning techniques are changing the role of 3PL providers.

Some authors use TCA to analyse the services offered by 3PL providers. Hanna and Maltz (1998) discuss 3PL expansion into warehousing by using TCA. Increasing asset specificity is related to a higher possibility of the 'make' decision, such as warehouse ownership. The authors indicate that logistics carriers should go beyond transportation into warehousing since it presents an opportunity to receive specific assets and knowledge that make users want to continue outsourcing to them. Bienstock and Mentzer (1999) use TCA to analyse the outsourcing decision for motor carrier transportation. The major finding is that considering the total of transportation and transaction costs under high uncertainty and asset specificity, common carriers are comparatively more efficient than the private carriers. Maltz (1993) applies TCA to find that only human asset specificity is positively related to the level of private fleet use. Also, Maltz (1994) conducts an analysis of third party warehousing by using TCA, and the major finding is that specific assets are negatively related to outsourcing, but frequency is positively related to outsourcing.

### **2.3.3 3PL selection and decision**

Outsourcing is a complicated decision. 3PL providers should understand the objective of the clients for outsourcing logistics services (Bhatnagar et al., 1999, Lieb, 1992). Daprian et al. (1996) identify the important factors that govern the decision-making process for the usage of 3PL services: determining 1) the organisational level for outsourcing, 2) the functional areas, 3) sources of information, and 4) selection criteria.

Breadth of service, business experience, characterization of service, compatibility, financial ability, flexibility of service, performance, price, physical equipment and information systems, quality, strategic attitude, trust and fairness are the major criteria for selection of 3PL providers (Bottani and Rizzi, 2006).

Through developing goals and selection criteria, 3PL users may better decide which 3PL providers will be able to provide the 'best fit' with their needs. Sink et al. (1996) find that users are able to understand core strengths and values, and it is expected that using 3PL providers with professional experience will enable the users to focus on their core competence.

Bolumole (2001) addresses factors which influence the decision to outsource. The first and obvious factor affecting such a decision is lack of skills in-house. The potential to reduce costs also influences the decision to outsource. Spear (1997) points out some firms would like to outsource individual functions, such as warehousing, but keep control of the overall process in-house. Hong et al. (2004b) discuss determinants of outsourcing based on the shipper firms' characteristics (e.g. firm size).

Sink and Langley (1997) describe the third-party logistics buying process as 1) strategic decision-making in firms, 2) industrial 'buying' behaviour, 3) transportation purchasing, 4) supplier selection, and 5) logistics relationships. Strategic decision-making is influenced by bounded rationality and the power base within the organisation. Industrial buyer behaviour explains the activities of organisational buyers. Transportation purchasing needs to consider variables and associated relationships, such as individual, corporate, an environmental factor, and their influence on conflict and cooperation. Supplier selection should consider quality, delivery, and price. Cooper and Gardner (1993) focus on four aspects for logistics

relationships: 1) the range of possible relationships; 2) the reasons for establishing relationships; 3) behavioural characteristics of relationships; and 4) the contingencies related to relationships.

#### **2.3.4 Expanding 3PL services**

There are two major types of 3PL providers. If 3PL providers focus on basic services, such as transportation and warehousing, they may create value through improving operational efficiency. Alternatively, if 3PL providers emphasize offering supply chain solutions, the creation of value may be obtained by vertical or horizontal integration (Berglund et al., 1999).

3PL providers try to offer a variety of services, ranging from basic logistics services to value-added services. Manzini et al. (2007) point out that the most outsourced logistics activities are the traditional warehousing and transportation activities. Value added service in logistics refers to the services that add a lot of additional value to the products being distributed (Rushton et al., 2000). Rushton et al. (2000) summarize major value added services: repacking, assembly, and return packaging. When a 3PL provider offers additional services, its client may want to move to a detailed contract to guarantee the performance and maintain a good relationship. The additional service should ensure the quality of products, the lead time of delivery, and related customer service elements. Power et al. (2007) state that the value-added services, such as electronic funds transfer, reverse logistics, bar-coding, and so forth, are significantly associated with the contribution of the 3PL provider to customer performance, like net profit, inventory control, and flexibility. The research conducted by van Hoek (2000) also finds that 3PL providers benefit from the performance improvement. Manufacturers expect to benefit from outsourcing and continue to increase the commitment to their 3PL providers. 3PL providers also enhance their value-added services, and expand additional operations in order to support mass customization.

Gadde and Hulthen (2009) discuss improving logistics outsourcing through increasing interaction between buyers and 3PL providers. Foulds and Luo (2006) point out that 3PL providers may offer value-added services for sustainable third-party warehousing. Van Hoek (2000) suggests that 3PL providers should consider offering extension

services. Supplementary services are seen as a growth area. By offering these services, 3PL providers can penetrate the supply chain with higher-value-added operations.

However, van Hoek (2000) states that supplementary services are not frequently offered by 3PL providers. Some firms develop a system that includes a package of services. The success of some firms can be attributed to particular purchasing and supply chain mechanisms. The implementation of these mechanisms, both internally and externally, contributes to the effective integration of the supply chain. However, TCA predicts that providing supplementary services may result in more fixed contracts than currently held by 3PLs. Offering supplementary services may require more specific investments and capabilities of the third party (van Hoek, 2000).

### **2.3.5 3PL in China**

Jiang and Prater (2002) discuss that there are three forces to improve the Chinese 3PL industry, namely, booming economy, entering the WTO, and the effect of development of e-commerce on the distribution and logistics systems.

Wang et al. (2006) propose three major reasons for the fast expansion of China's 3PL providers. First, many multinational firms have been moving their logistics businesses to China. Second, an increasing number of Chinese firms outsource their logistics to professional agents in order to reduce logistics costs and improve their core competence. Third, the Chinese government has started to encourage investment in the logistics industry.

However, many international enterprises find it difficult to implement consistent logistics strategies as their sourcing and distribution throughout China are blocked by poor transportation (Speece and Yukiko, 1995). Zhou et al. (2008) identify some serious barriers to development of China's 3PL industry, namely, inadequate transportation and information technology, local protection regulations, lack of highly qualified logistics managers, and lack of awareness of importance of the logistics concept.

Many studies contend that the competitive environment in the Chinese logistics industry has forced many 3PL providers to reconsider their value propositions to customers (Zhou et al., 2008). Lau and Zhang (2006) propose that outsourcing would

be one of the most effective business strategies for Chinese firms to achieve cost-effective performance. According to the China-based survey of 3PLs conducted by Hong and Liu (2007), most respondents indicate that they plan to offer value-added services within the next three years. Chen et al. (2010) point out that the value-adding characteristics of logistics outsourcing have become a key component of China's transitional economy.

### 2.3.6 3PL in New Zealand

Cavana et al. (1997) indicate that many factors may influence the logistics in New Zealand. They are: island character, topography, climate, and the pattern of natural resource distribution, patterns of historical settlement, and regional economic growth.

Factors	Impact on shippers' practice of logistics
<b>Structural factors</b>	
Cook Strait	The need for a twin-warehouse strategy to maintain high levels of service nation-wide; difficulties in consolidating the manufacture of perishables
The dominance of Auckland	The need for Auckland-based shippers to manage backhauls; direct deliveries from plants to Auckland-based end-customers of hard-to-move consumer goods
Thin market density	Consolidation of distribution by shippers of complementary product
Preponderance of trade in primary products	The inclination for shippers of primary products to employ proximate ports
Geographical isolation	The push for importers and exporters to consolidate shipments for reducing freight costs
<b>Regulatory</b>	
The removal of the 150km restriction on trucking	Reduction in the number of warehouses used by shippers
Deregulation of coastal shipping	Complex inter-island freight patterns that employ international lines for shipping non-urgent, southbound cargo
The Closer Economic Relations Trade Agreement between NZ and Australia	The trend of Australasian FMCG manufacturers to restrict manufacturing in Australia for realizing economies of scale, and to focus on only marketing and distribution within NZ
<b>Development</b>	
Technological advances in freighting perishables	Overcoming the barrier of distance in maintaining freshness of product in overseas markets
Paring down ferry transit times across Cook Strait	The proclivity of shippers to employ a single warehouse in the lower North Island
Inland ports	The alternative to exporters and importers to avoid shipping through their nearest ports

**Table 2-1: Shippers' practice of freight logistics in New Zealand**

*Source: (Sankaran, 2000)*

In addition, Sankaran (2000) lists three sets of factors that impact logistics practice (table 2-1). The structural factor meaning the invariants of the New Zealand context, such as geography and density of population. Regulatory factors represent the associated perspectives of the regulatory environment in New Zealand. Development

factors refer to the changes that are influenced by the economic and technological environment.

In addition, the author shows that the national large transport companies are increasingly offering differentiated services by 'adding value' rather than competing on price. The author lists three types of values added:

- Accurate tracking information about freight
- Seamless door-to-door services
- Expertise in warehouse management

Elizabeth (1999) indicates that New Zealand 3PL providers offer a broader range of value-added services, and the logistics providers are willing to offer services that the customers want to purchase. For instance, AEI Logistics Company offers retail price tagging when they receive products from overseas.

## **2.4 Drivers for 3PL usage**

Ballou (1992) indicates the major drivers for 3PL usage:

- Cost reduction and low capital requirements
- Offering advanced technology
- Improved customer service
- Obtaining competitive advantage
- Mitigating risk and uncertainty

Lieb and Bentz (2005) mention about the reasons for using a logistics provider. The three most important reasons: service consideration, cost consideration, and reliability.

Sahay and Mohan (2006) list the reasons to drive the development of 3PL providers. They are logistics cost reduction, focusing on core competence, extending a new market, increasing inventory turns, driving productivity improvements, and achieving flexibility in operations.

However, Arroyo et al. (2006) argue that the factor of cost reduction is not always the key reason to use 3PL providers. This does not mean that cost reduction is not important. There are other critical reasons, based on the findings of their research, such as improving the firm's flexibility, enhancing customer service, and developing the ability to focus on core business.

## **2.5 Third-party logistics users**

The purchasing structure and the role of purchasing are quite different between large firms and SMEs. Generally speaking, a large firm tends to have its own procurement department and a professional purchasing team. In contrast, purchasing in SMEs may be deemed a low priority due to small purchasing power and order quantity. However, as indicated by many authors, purchasing is a critical component in SMEs although not often recognised as such by most SMEs (Dollinger and Kolchin, 1986; Scully and Fawcett, 1994). Only a few SMEs have separate purchasing functions. In most SMEs, owner managers are responsible for purchasing activities (Quayle, 2002a). Purchasing of SMEs is fragmented and non-strategic. Zheng et al. (2007) point out that large firms tend to be more positive regarding the procurement function's contribution than SMEs. Cox et al. (2001) reveal that SMEs are less enthusiastic about e-procurement, compared to larger firms.

The following purchasing issues exist in SMEs: instability through changes of ownership (Ennis, 1999), strategic direction changes (Gunasekaren et al., 2000), the speed of technological change (Curkovic et al., 2000), and globalisation of sources for state-of-the-art products (Quayle, 1998). SMEs lack the resources to conduct economical purchasing. Normally SMEs are minority participants in a supply chain. Globalisation and mobile markets force these firms to face new challenges. For instance, SMEs may need to consider offsetting the risks of losing control of product knowledge (Quayle, 2002a) through acquiring the benefits of local sourcing.

The research shows that SMEs have little purchasing power and they are unaware of how effective purchasing can positively influence profitability. The best solution is the use of a purchasing consortium (Quayle, 2002a). Quayle (2002a) reveals that the option is attractive to 74 percent of the firms. According to research conducted by Quayle (2002a), only 19 percent of the companies he researched have a separate

purchasing division. 81 percent of respondents state that the owners or managers are responsible for purchasing in SMEs. In terms of purchasing service, 74 percent of respondents would consider using a purchasing service. Moreover, 36 percent of them indicated that they would use such a service for all purchases. Price and quality were identified as the two most important factors of purchasing service performance. The research reveals that it is more desirable and feasible for SMEs to organize for purchasing as a consortium. 70 percent of respondents believe that this form is feasible. The primary concern is the competitors within the consortium.

### **2.5.1 Obstacles to SME's procurement**

Finley (1984) finds that one disadvantage for SMEs is purchase volume. The purchasing volume for SMEs is quite small due to cash flow constraints (Zheng et al., 2007). SMEs usually do not have the same bargaining power as large firms; this impacts on their possibilities of negotiating lower prices. Hudson and McArthur (1994) discuss in depth the contracting issues for SMEs. The asymmetry position for SMEs makes them unattractive as trading partners because of high risk and relevant transaction costs. Moreover, Park and Krishnan (2001) indicate that most executives of small firms rely on individual traits when selecting suppliers, including personal characteristics, age, education, and work experience. Most selection processes are subjective and do not apply the institutional procedures of large firms when looking for appropriate suppliers.

Ellegaard (2006) notes that SMEs' contractors may lack market expertise, and information and time to select appropriate suppliers. The author also finds a high degree of supplier loyalty, which helps SMEs reduce purchasing risk. Scully and Fawcett (1994) claim that global sourcing is not suitable for SMEs because of limited managerial and capital resources. Usually, they need to outspend large firms in order to achieve success. There are a lot of SMEs in New Zealand (New Zealand Inland Revenue, 2010). Most of them struggle to find an appropriate international supplier. The profit margin may shrink due to an increase in procurement costs and related relationship issues (Ellegaard, 2006). Another issue of purchasing for SMEs is a lack of innovation (Quayle, 2002b), which is especially required when SMEs prepare to extend from local to global sourcing. Holter et al. (2008) claim that many SMEs are unaware of the importance of purchasing, and that a diminished purchasing power

may result in SMEs being treated as 'price takers' rather than 'price makers'. Mudambi et al. (2004) find that some SMEs successfully follow the strategies of large firms, such as co-operative purchasing strategies.

### **2.5.2 Supplier capabilities**

Supplier capabilities are viewed as a combination of skills, knowledge and resources managed by suppliers that customers value (Harmsen and Jensen, 2004). Most of the literature focuses on the organisational capabilities of suppliers of large firms (O'Regan et al., 2006; Liker and Choi, 2004). SMEs have to rely on external resources, such as receiving valuable information on a supplier's capabilities (Dollinger and Kolchin, 1986). Pressey et al. (2009) provide empirical evidence that the majority of SMEs have good relationships with suppliers. In many cases, those firms feel that the relationships among them are even better than their relationships with customers.

Pearson and Ellram (1995) indicate that quality and cost factors are primary criteria used when evaluating suppliers. SMEs appraise the performance of suppliers based on price, quality, product reliability, and time to market (Quayle, 2003). Möller and Törönen (2003) claim that suppliers can provide their customers with value propositions based on distinct capabilities, such as production, delivery, process improvement, innovation, networking, and understanding the buyer's market. Value creation depends on the degree of complexity involved in the relationships between the purchaser and supplier and the time of value realisation. There are three main categories, 1) core-value production, 2) value-adding production, and 3) future-oriented value production.

### **2.5.3 Reasons to outsource logistics functions**

A number of the articles propose some reasons for 3PL users to outsource logistics functions to 3PL providers: focus on core competence (Simchi-Levi et al., 2008), logistics cost reduction (Arroyo et al., 2006), reducing capital investments (Mentzer et al., 2007), access to new technologies (Sohail et al., 2006), improving customer service (Sahay and Mohan, 2006), improving the logistics process (Mentzer et al.,

2007), expansion to unfamiliar markets (Sahay and Mohan, 2006), and productivity improvements (Sahay and Mohan, 2006).

However, there are also some reasons against 3PL usage: loss of control over the logistics function (Sanders et al., 2007), uncertainty in service levels offered (Lau and Zhang, 2006), hidden true cost of outsourcing (Sanders et al., 2007), losing touch with important information (Sanders et al., 2007), and lack of shared goals (Tsai et al., 2008).

#### **2.5.4 3PL users in China**

Rahman and Wu (2011) discuss the logistics outsourcing relationship in China between 3PL providers and manufacturers. Manufacturing firms might consider outsourcing their logistics services to a 3PL provider since it seems that these professional firms can provide high quality logistics service. The 3PL provider with a better financial status and continuous improvement in services would be a good choice for the manufacturing firms. Shen (2000) points out that logistics users cannot be confident in the lead-time promises of their 3PL providers.

Tian et al. (2010) indicate that 3PL users could better serve their own customers through building close relationships with their major 3PL providers in terms of levels of service variety, information availability, timeliness, and logistics improvement.

Langley et al. (2006) conduct a survey of China-based 3PL users and reveal that operations management in China is heavily based on the relations between individuals. Thus, the authors highlight that *Guanxi* exists in China's unique business environment, and it is critical that the researcher understands the leveraging provided by this factor.

#### **2.5.5 3PL users in New Zealand**

Sankaran et al. (2002) indicate that compared to the international scale, New Zealand's manufacturing is rather small scale. For several New Zealand manufacturers, the size of the 3PL contract and the benefits from outsourcing are not sufficient to make the contract worthwhile for both 3PL users and providers.

New Zealand 3PL providers believe that outsourcing service has very low penetration in New Zealand's markets because a lot of 3PL users actually want, for example, to

keep their own warehouse and cannot realise the importance and benefits for using outsourcing services (Sankaran et al. 2002).

Elizabeth (2001) lists three major reasons that New Zealand users want to contract out their distribution and supply chain management. First, companies are struggling with competition and their inability to keep margins, so they need to consider their core competences. Second, 3PL providers have strong advanced technology to maintain their customers. Third, 3PL users are able to release capital into other areas when they outsource parts of their businesses to the logistics providers. However, many companies perceive that using 3PL providers would be costly, and cannot fully understand procurement issues and the true cost for every transaction of their supply chains.

## **2.6 Purchasing and supply management**

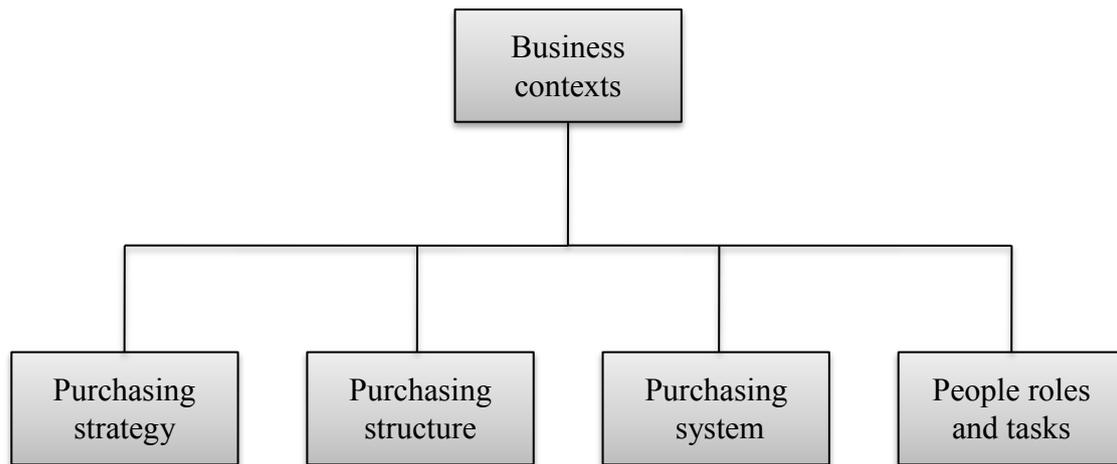
Increasingly, researchers focus on the issue of how purchasing adapts to business organisations and how it adds strategic value and contributes to firm success.

Harland et al. (1999) reveal the findings of a Delphi study on the impact of social, technological, financial and political factors on supply strategies for the future.

Van Weele and Rozemejier (1996) discuss the changes in key markets, buyer behaviours, competition, economic factors and technology as well as their influence on purchasing functions. Key forces may include consumer demand and preference (van Weele & Rozemejier, 1996), alliances, ethics, and sustainability (Pagrach et al., 2000).

Andersson and Norrman (2002) identify the framework of key purchasing processes. They are: defining or specifying the service (e.g. mode of transportation specified by the purchasing company), understanding the volume bought, simplify and standardise (e.g. standardisation of operation), market survey, request for information, request for proposal, negotiations, and contracting.

Business contexts are generally divided into purchasing strategy, purchasing structure, purchasing system, and people roles and tasks. Figure 2-4 shows the major aspects of purchasing and supply management.



**Figure 2-4: The aspects of purchasing and supply management**

*Source: (Zheng et al, 2007)*

In terms of the key strategic issues existing in the purchasing function, purchasing strategy needs to support the corporate strategy of the firm (Ellram and Carr, 1994). Zheng et al. (2007) find that supplier relationship management may become one of the key issues of strategic alignment between purchasing strategy and corporate strategy.

Carter et al. (2000) believe that low-value and non-critical standard commodity purchases are the most likely to be outsourced to 3PL providers. The purchasing function is perceived as important by senior managers (Dooley and Yeow, 1998). Johnson et al. (2002) find that purchasing plays a strategic role that is related to internal planning (product and technology planning) and external system planning. There is mixed statistical evidence regarding the impact of purchasing activities on firm success (Ellram et al., 2002).

Buffa and Jackson (1983) present a multi-criteria linear programming model for supplier selection. In the model, two factors are considered: 1) supplier characteristics, which include quality, price, service experience, and on-time delivery; and 2) the purchasing firm's specification, including material requirements and safety stock.

There is much evidence to prove that the structure of purchasing is moving towards a 'hybrid' centralised and decentralised arrangement (van Weele & Rozemeijer, 1996). Johnson et al. (2002) find that the strategic role of purchasing can link the industry environment and the organisational structure and that outsourcing of purchasing

activities may result in the reconfiguration of purchasing roles and responsibilities. Also, those activities may become less operational and more strategic.

Purchasing system development will mainly involve the Internet. Trent and Moncka (1998) foresaw external system linkages creating networks from purchasing organisations to suppliers. Cox et al. (2001) suggest that the use of the Internet for supply sourcing will be the norm.

There are a number of issues regarding purchasing and supply people. These include: the number of procurement and supply people, job roles, skill levels, education and training requirements. With the outsourcing of procurement, it is suggested that the number of purchasing people in the user organisation will decline (Carter et al., 2000).

## **2.7 Measuring benefits for 3PL providers and users**

Griffis et al. (2004) advise that measures should be realistic, representative, consistent, cost effective, and understandable. Dornier et al. (1998) maintain that the measures should be managed by priority in order to improve their efficacy. The primary goal is to control and monitor the benefits to 3PL providers and users.

Hamdan and Rogers (2008) point out that organisations may not be able to adequately measure benefits of logistics performance. The simple definition of key performance indicators (KPIs) may not be suitable to catch the real performance level of each individual unit. Routroy (2009) proposes that there are some significant benefit measures for 3PL. They are: cost, time, customer service, organisation and information.

Krakovics et al. (2008) indicate that the system of benefit measures should include a few factors. The first is efficiency, which measures the efficiency of resources. The second is customer service, which is product availability to satisfy customer's needs. The third is flexibility, which is the flexibility to quickly respond to any change. Beamon (1999) divides flexibility into four parts: flexibility of volume (level of production), of delivery (delivery dates), of mix (various products produced), and of new products (ability to introduce new products).

Lohman et al. (2004) introduce the model for measuring benefits based on Kaplan and Norton's balanced scorecard. The main attraction with this model is that it includes

both financial and non-financial indicators – and the relationships between them – as well as their relationships with a firm's strategy. There are other indicators for measuring benefits, such as order-fill rates and inventory turns (Wilding & Juriado, 2004), and IT systems (Bourlakis & Bourlakis, 2005).

## **2.8 Chapter conclusion**

Many researchers focus on the basic services offered by 3PL providers. Few studies examine 3PP as value-added services implemented by 3PL providers. Due to low purchasing power and order quantity, many 3PL users, particularly SMEs, struggle to obtain an advantageous purchasing price.

TCA offers a powerful theoretical lens to analyse outsourcing activities, which can help to improve the understanding of whether the firm is more suitable to insource or outsource activities. Based on TCA, outsourcing may be incurred in the hybrid context. There are various hybrid institutions between the market and hierarchy. Group purchasing forms a type of hybrid institutions since combining purchasing power of the participated group members can reduce the total transaction costs. The collaborating firms still have their own division, such as marketing and manufacturing, and also, they may combine their purchasing power in order to obtain more benefits, such as lowering purchasing prices and using resources more efficiently.

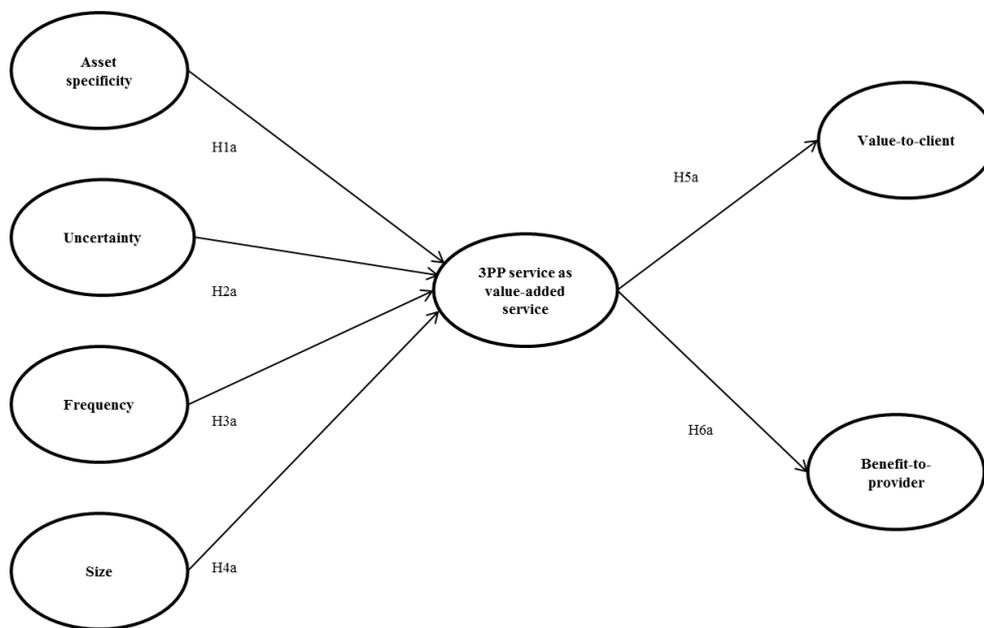
One of the major concerns for 3PL providers is associated with incorporating value-added service offerings. Many 3PL users tend to expect their logistics providers to offer value-added services to satisfy their daily logistics needs. Although some 3PL users may have good relationships with global suppliers, they would find it difficult to source a suitable a third party purchasing organization that helps them get cheaper purchasing price and offer 'one-stop' integrated services. 3PL providers have their advantages to offer 3PP service, such as domestic and international logistics networks, financial strengths of 3PL providers, ability to offer 'one-stop' service, and offering integrated management systems. The 3PL providers wanting to offer 3PP service would be to adapt a group purchasing format. Through consolidating group purchasing orders together from 3PL users, the logistics providers can exert the group purchasing power to negotiate cheap purchasing price on behalf of their customers. Moreover, based on the purchasing volume aggregated by 3PL providers, the number

of transactions for 3PL users may decrease because they would not need to negotiate with multiple suppliers, and the associated transaction costs are minimized. The following section will describe the conceptual model for this research.

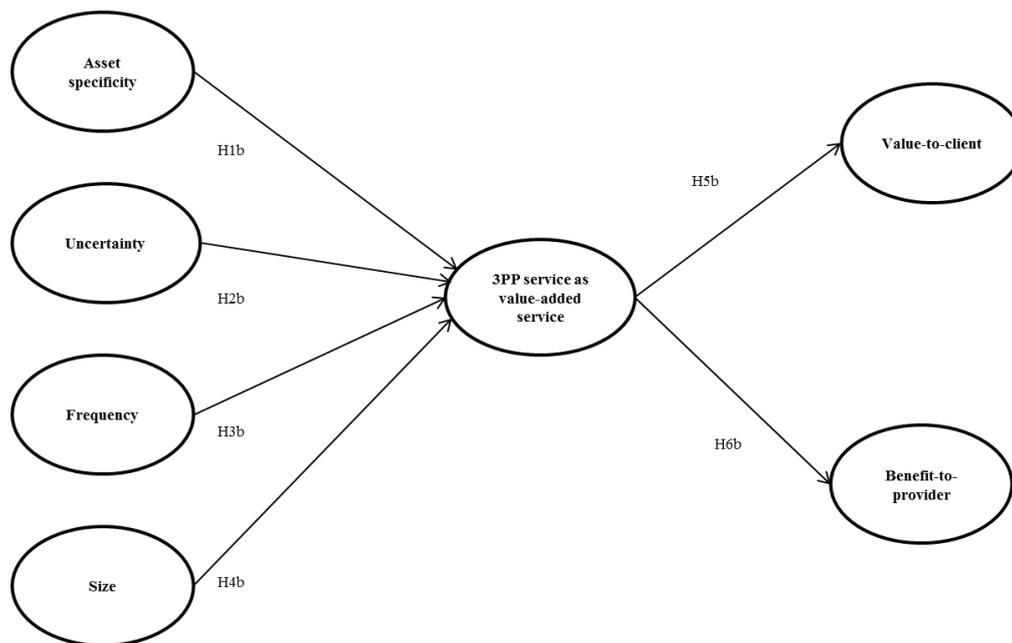
## Chapter 3 - Conceptual model and hypotheses

### 3.1 Research model

Several researchers have used transaction cost theory as a tool to analyse basic services offered by 3PL providers (Hanna and Maltz, 1998; Bienstock and Mentzer, 1999; Maltz, 1993, 1994). The present study focuses on third-party purchase as a value-added service offered by 3PL providers. The initial idea for this research was mentioned in Shi and Arthanari (2011). As mentioned earlier, asset specificity, uncertainty, and frequency are three variables influencing transactions. Moreover, transaction size is another important variable to influence third party purchase. If 3PL providers could aggregate similar orders together, it would be more beneficial for 3PL users. Consolidating purchasing power could increase the ability of 3PL providers to reduce purchasing costs. A conceptual model for the research undertaken is shown in figures 3-1 and 3-2.



**Figure 3-1: Conceptual model for 3PP service (3PL providers)**



**Figure 3-2: Conceptual model for 3PP service (3PL users)**

According to figures 3-1 and 3-2, the hypotheses are related to the effect of asset specificity, uncertainty, frequency and transaction size on third party purchase as the value-added service. Also, the research examines the relationships between 3PP and value-to-client (3PL user) and benefit-to-provider. The hypotheses are from two perspectives: 3PL providers and users.

### 3.2 Hypotheses

The following hypotheses are from two different datasets. One is from 3PL provider's perspective and the other is from the 3PL user's perspective. The group of 'a' comes together for 3PL providers and the group of 'b' are for 3PL users. In fact, they are tested with different sets of data from 3PL providers and users respectively from two different countries.

#### Asset specificity

When one party has specific investments that are used to a specific exchange partner, the transaction-specific assets are established (Williamson, 1985). Specific assets refer to assets that cannot be easily redeployed in another application or transferred to another customer (Ellram et al., 2008). Asset-specific investments made by a party within a transactional relationship result in higher transaction costs (Grover and

Malhotra, 2003). 3PL providers, if required to invest in more specific assets (e.g. building a new warehouse for purchasing service in a close geographic area in order to deal with suppliers) to support an activity, may choose not to offer that service since the transaction risk goes up for the 3PL providers. Meanwhile, suppliers can engage in opportunistic behaviour (e.g. service deterioration, loss of control and information sharing). The difficulty of asset-specific investments is that they represent a hold-up potential (Bengt and Roberts, 1998). At the beginning of the transaction, 3PL providers may have multiple choices to choose a supplier. However, once the asset-specific investments are made, the buying situation can be dramatically transformed (Williamson, 1985). 3PL providers may not have advantages or powers to influence the purchasing price since suppliers understand that they would not have many alternatives to choose from. Therefore, it is predicted:

**H1a:** The larger the required investments in non-deployable assets, 3PL providers are less likely to offer such 3PP service.

Williamson (2008) proposes that “outsourcing properly includes outside procurement for both generic goods and services” (p. 10). A 3PL user might outsource its purchasing activities, if 3PL providers want to invest in more specific assets (e.g. the providers’ employees undertake specialized purchasing training) for 3PP service. Actually, a single 3PL user still has concerns of financial constraints, low purchasing quantity, lack of highly qualified purchasing professionals, and limited bargaining power. The 3PL providers with a strong financial strength and competence for improving their services would give more value to 3PL users. Thus, it is predicted:

**H1b:** The usage of 3PP service by 3PL users is positively associated with high investments on such service by 3PL providers.

### Uncertainty

Uncertainty is the inability of a firm to confidently forecast future events. There are two sources of uncertainties: the market and the firm itself. External uncertainty could be from the level of volatility of product availability, key suppliers, purchasing prices,

and other disruptions to the market (Ellram et al., 2008). Internal uncertainty could be from the inability to forecast future demand. A main source of uncertainty for decision-making is caused from the lack of capability of the firm to collect the information and forecast the occurrence of changes in the external environment (Williamson, 1985). Meanwhile, information asymmetry (Williamson, 1985) results in the inability of 3PL providers to comprehensively understand details of suppliers since they may pursue “self-interest seeking with guile” (Williamson, 1985, p. 47). Information asymmetry increases the scope for opportunism (Lonsdale, 2001). Thereby, 3PL providers may not be sure that they can conduct consistent service at reasonable costs. It is predicted:

**H2a:** If uncertainty is low, then 3PL providers will offer such 3PP service.

3PL users’ perceptions of uncertainty can be influenced by different variables of the environment, such as downstream market demand, the ability of logistics providers, and the level of customer service. High uncertainty leads to high transaction costs, so 3PL users need to get greater control in order to reduce such costs. Vertical integration to implement control adopted by 3PL users can reduce high transaction costs. They do not want to outsource a function (e.g. purchasing) to a third party when the associated uncertainty is much higher than expected. Therefore, it is predicted:

**H2b:** If uncertainty is low, then 3PL users will use such 3PP service.

### Frequency

Based on TCA, purchasing leverage is possible for recurrent transactions conducted with the same supplier (Ellram and Billington, 2001). If 3PL providers offer small amounts of purchasing services and few shipments, 3PL users may not receive adequate benefits. However, it is possible for 3PL providers to obtain strong ability of purchasing leverage through conducting recurrent transactions with the same supplier (Ellram and Billington, 2001). Therefore, it is predicted:

**H3a:** If the frequency of using purchasing service is high, then 3PL providers will offer such 3PP service.

As the transaction frequency of consolidated purchasing of similar products on behalf of a number of 3PL users increases, 3PL providers are able to get better leverage so that 3PL users would receive more benefits. This is analogous to the frequency variable of Williamson (1985) in the make-or-buy context. 3PL users may not receive more benefits if 3PL providers cannot offer large amounts of purchasing services, quickly consolidate orders, and/or fully use the capacity of shipments. Thus, it predicts:

**H3b:** If the frequency of placing purchase orders is high, then 3PL users will use such 3PP service.

*Transaction size*

According to TCA, the transaction size determines the economies of scale of transactions (Williamson, 1985). Larger transaction size can increase a firm's purchasing power (Ramsay, 1994). Through consolidating orders by 3PL providers, they are able to get lower purchasing prices for products and materials. The large size of the orders gives 3PL providers a priority right in negotiation with suppliers so that they may seek more benefits for 3PL users. Therefore, it is predicted:

**H4a:** The larger the size of the transaction, 3PL providers have larger bargaining power to maintain the purchasing services at lower costs.

In terms of procurement, single firms, such as SMEs, could be deemed to be asymmetrically positioned when going for international sourcing. Wilson and Roy (2009) indicate the obstacles to effective procurement for SMEs: small purchasing quantity, lack of strong negotiating power, issues of supplier reliability, the lack of support from suppliers, and geographical distance. Due to volume consolidation by 3PL providers, the number of transactions for 3PL users may go down since they do not need to deal with multiple suppliers, and the associated costs (e.g. searching and

bargaining costs) are reduced (Vining and Globerman, 1999). Therefore, it is predicted:

**H4b:** If 3PL providers have capability to create larger size transactions, then 3PL users will use such 3PP service.

*Value-to-client*

Outsourcing is incurred in the hybrid context since the hybrid institution that combines the structures of market and hierarchy (Williamson, 2008, 1985) may bring some benefits to 3PL users in the form of a new governance structure. 3PL users can focus on their core competence and outsource purchasing functions for non-critical items to a 3PL provider. They may combine their power of procurement via aggregation by 3PL providers, since most 3PL users, such as SMEs, struggle with the purchasing price due to low level of purchasing power (Hudson and McArthur, 1994). In particular, it is hard for 3PL users to check quality of products, exchange information with suppliers, and painful to incur high operation costs due to long distances involved when they want to do international sourcing (Wilson and Roy, 2009). The implementation of an effective purchasing strategy would provide more benefits for 3PL users. Therefore, it is predicted:

**H5a:** 3PL providers perceive that 3PP service is positively associated with bringing more value to their clients.

Also, 3PP as a new service could help 3PL providers keep their customer loyalty, and 3PL providers can help their users to reduce purchasing costs and share purchasing risk. Thus, it predicts:

**H5b:** 3PL users perceive that 3PP service is positively associated with receiving more value offered by 3PL providers.

*Benefit-to-provider*

3PP as the value-added service is a good option for 3PL providers. In fact, 3PL providers play a role of a group purchasing organization. The consolidation by 3PL

providers is used to transfer activities from 3PL users, such as negotiation, contract management, and supplier evaluation (Nollet and Beaulieu, 2005). The benefits for 3PL providers through offering 3PP service include improvement of customer satisfaction, high utilization of capacity of their warehousing and transportation, and development of a new profit source. 3PL providers should be aware of the importance of value-added services although the current basic services contribute the majority of the total profits. Therefore, it is predicted:

**H6a:** 3PL providers perceive that 3PP service is positively associated with receiving more benefits for themselves.

Ansari and Modarress (2010) point out that 3PL users expect their logistics providers to offer value-added services to manage their logistics needs in both current and potential markets. 3PL users perceive that 3PP services being offered by 3PL providers can enhance the providers' strong reputation, improve their market position, and sustainably gain competitive advantage (Salleh et al., 2009). Thus, it is predicted:

**H6b:** 3PL users perceive that 3PP service is positively associated with bringing more benefits to their 3PL providers.

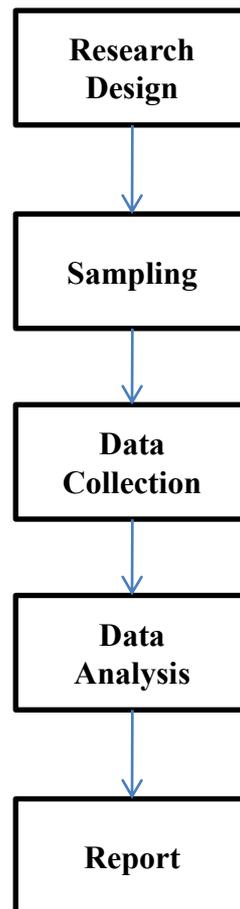
### **3.3 Chapter conclusion**

This section mainly discusses the research model of offering 3PP service as value-added services. The proposed hypotheses are given. In the following section, the main methodology for this research will be described.

## **Chapter 4 - Methodology**

The first chapter gives the background of the research, and the second chapter mainly discusses the extant literature. Based on these discussions, the gaps in the literature have been identified and the research questions formulated.

This chapter outlines the two main methods (questionnaires and interviews) adopted for this study in order to answer the research questions: a) What are the impacts of asset specificity, uncertainty, frequency, and transaction size on the possibility of 3PL providers including third party purchase as a value-added service provided?; b) What are the strengths and weaknesses of 3PL providers to implement third-party purchase service?; c) How do 3PL providers add third party purchase as a value-added service?; d) What are the benefits for the 3PL providers if the third party purchase service is offered by them?; and e) What are the values for the clients of the 3PL providers if the third party purchase service is offered by 3PL providers? The purpose of this chapter is to discuss the research philosophy, describe the methodology adopted, explore data collection, and explain data analysis. Figure 4-1 illustrates the general steps of the research process.



**Figure 4-1: Representation of research process**

*Source: (Blaxter et al., 2001)*

#### **4.1 Research philosophy**

Research is “simply the process of thoroughly studying and analysing the situational factors surrounding a problem in order to seek out solutions to it” (Cavana et al., 2001). There are two fundamental sets of philosophical assumptions in studying social phenomena. They are: 1) Ontology refers to the assumption regarding how we see the world. The central point of ontology is the question of “whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors” (Bryman, 2008, p. 32); 2) Epistemology refers to the assumption regarding the best way to study the world. The main focus of epistemology is the exploration of “whether the social world can and should be studied according to the same principles, procedures and ethos as natural

science” (Bryman, 2008, p. 27). The choices of ontology and epistemology are associated with the stances of researchers regarding the nature of reality and determine how the researchers are able to get knowledge regarding the world that they are researching (Chua, 1986).

Each choice can be made based on the two philosophical assumptions just presented, which should be interconnected and tend to be complementary, in order to ensure similarity and congruence (Collis and Hussey, 2009).

#### **4.1.1 Positivist research**

There are three approaches to business research, as follows: First, positivist research, which uses precise, objective measures and is normally associated with quantitative data. Positivist researchers use a linear strategy of “formulating a hypothesis and then, attempting to disprove these assumed relationships by concentrating on the null hypothesis” (Cavana et al., 2001, p. 8). The data collection follows rigorous procedures and the quantitative data is analysed by using professional statistical methods. Therefore, good positivist research can be replicable, i.e. where other researchers are able to conduct the same research in the same way and get the comparable results. Positivist research relies on deductive reasoning, beginning with a theoretical position and incorporating empirical evidence.

#### **4.1.2 Interpretivist research**

Second, interpretivist research, where the interpretivist researcher is interested in understanding the real experience of people. The researcher identifies what is more meaningful to every individual being investigated. Interpretive researchers do not “predefine dependent and independent variables, but focus instead on the complexity of human sense-making as the situation emerges” (Myers, 2009). They expect to understand the phenomena by the meanings that people assign to them (Orlikowski and Baroudi, 1991). Interpretivist research provides a rich description of how people think, feel and react under certain specific situations.

#### **4.1.3 Critical Research**

Third, critical research, which is to empower people to establish a better world for themselves. Research should focus on “uncovering myths and revealing hidden meanings” (Cavana, 2001, p. 10). The critical researcher should “present the research findings in such a way that they become a catalyst that leads to transformation” (Cavana, 2001, p. 10). Critical researchers assume that social reality is produced or reproduced by people (Myers, 2009). The main task of critical research is that of social critique.

#### **4.1.4 Philosophical approach to research**

The philosophical approach adopted in this research is positivist and interpretivist research. Based on the theoretical basis to start with, the positivist approach to knowledge depends on the facts, and knowledge is only constituted by the facts. The constructs and instruments are measurable and testable. The interpretivist and positivist researchers can share the same belief and knowledge; the research that develops uses constructs that are similar and that are key factors to influence 3PP service. This is useful to ascertain the scope of the research (Yin, 2003). Using the interpretivist approach would be better to explain the facts identified in the positivist approach.

### **4.2 Research design**

According to Bryman and Bell (2003), research design offers a framework for gathering and analysing data. Choosing a different research design reveals decisions regarding the dimensions of the research process. The researchers can use some criteria to measure the quality of research, such as reliability, validity and replication.

This research focuses on two countries: China and New Zealand. Such cross-sectional design gives a more comprehensive picture of understanding 3PP services perceived by 3PL providers and users, and connects in most people’s thoughts with questionnaires (Bryman, 2008). Moreover, the research examines the hypothesized relationships between the determinants of TCA and 3PP service, and richly explains and describes the hypothesized relationships by using interview data.

First, the questionnaire method is an effective method to conduct this research since most people are familiar with the use of questionnaires (Oppenheim, 1992). Using the questionnaire method allows the researcher to progress from gathering the ideas and suggestions of people in the qualitative stage to confirming whether the ideas and suggestions are widely held throughout the whole organization (Cavana et al., 2001). The study uses the professional online survey software (Survey Monkey) and other electronic methods to design and deliver the questionnaires. When the respondents receive the survey link or an electronic questionnaire by e-mail, they will be able to fill in the questionnaires in their available time. Most questions in the questionnaires are dealing with the determinants of TCA (asset specificity, uncertainty, frequency, and transaction size).

Second, this research uses interviews as a method. The interview method is in-depth, naturalistic, and narrative (Holland and Ramazanoglu, 1994). The interviewees are able to explain and clarify questions through dialogue. Moreover, it is a quick method that enables the researchers to efficiently communicate with the interviewees and obtain high quality data. In the case of this specific research, the researcher visited the organizations to conduct face-to-face interviews. Based on Oppenheim's suggestions (1992), the interviewer should ensure that the interview questions are not too complicated and the number of sensitive questions is kept to a minimum.

## **4.3 Selecting sample**

### **4.3.1 Questionnaire sample**

This research uses structural equation modelling to analyse the data, so an optimal sample is between 100 and 200 observations (Kotzab et al., 2005). Hair et al. (1992) indicates that samples with a number of observations between 50 and 400 are also acceptable. The sample size for this research needs to be over 150.

This research focuses on 3PL providers and users in China and New Zealand. The questionnaire sample can be from two countries, including the industries of logistics, manufacturers, retail/wholesale, and so forth. The logistics companies having international freight forwarding, domestic/international logistics, and warehousing are targeted for both countries. 3PL users are from SMEs since those firms may not have

sufficient negotiation power due to low purchasing volume to get the purchasing price down.

However, China and New Zealand have different regulations to define SMEs. In 2011, the China Ministry of Industry and Information Technology of China, the National Bureau of Statistics of China, the National Development and Reform Commission of China and the Ministry of Commerce of China jointly released the new regulations on the standards for classification of SMEs. The regulations divide SMEs into three categories: medium, small and mini. Based on different types of industries, the regulations specify the upper limit standard. For instance, the upper limit of employees for SMEs in the retail industry is 300; the operating revenue is less than RMB 200 million<sup>1</sup>.

Based on the Economic Development Indicator report issued by the New Zealand government, SMEs have less than 250 employees. Unfortunately, there is no official release to indicate the standards of annual sales for SMEs. As New Zealand is a member of Organization for Economic Co-operation and Development (OECD), the researcher is able to identify that the annual sales for SMEs in this report are no more than 50 million Euro dollars, which is equivalent to 75 million NZ dollars<sup>2</sup>. Moreover, Inland Revenue states that SMEs have an annual turnover of up to \$100 million (Inland Revenue, 2010).

#### **4.3.2 Interview sample**

For the samples of 3PL providers to be interviewed in both countries, the researcher selected the logistics companies that have domestic and international transportation networks, offer international freight forwarding services, and establish good reputations in the logistics industry. For selected companies in China, the number of employees of logistics companies in China is around 300 or more, and their annual sales are about RMB50 million or more. The number of employees in selected logistics companies in New Zealand is about 100 or more, and their annual sales are around \$10 million or more.

---

<sup>1</sup> For the full details of regulations, please refer to the link below  
(<http://www.chinabriefing.com/news/2011/07/07/china-issues-classification-standards-for-smes.html>)

<sup>2</sup> For the full details of report, please refer to the link below  
(<http://www.oecd.org/std/entrepreneurshipandbusinessstatistics/35501496.pdf>)

For the samples of 3PL users to be interviewed in both countries, the criteria are the same as used in the questionnaire. China's sample would be assessed by using the standards of classifications of SMEs; which means that for the different industries the criteria need to be changed. For instance, the upper limit in the IT industry is 300 persons; the operating revenue is less than RMB100 million. For New Zealand's samples, the general SME criteria is the number of employees less than 250 and the annual sales below \$75 million. Due to the time limitation, it is hard for the researcher to cover all industries to see the perception of 3PP services by 3PL users. The profiles of selected companies will be mentioned in chapter 5.

#### **4.4 Research methods**

This research uses quantitative and qualitative methods. Quantitative research "is broadly based on the ideals of positivism" (Cavana et al., 2001, p. 186). The values of quantitative research include objective observation, precise measurements, statistical analysis and verifiable truths. Quantitative research assumes that 'reality' is waiting to be discovered. "The hallmarks of good quantitative research are reliability and validity" (Cavana et al., 2001, p. 186).

Qualitative research focuses on understanding through "closely examining people's words, actions and records rather than assigning mathematical symbols to these words, actions and records" (Cavana et al., 2001, p. 134). Qualitative research assumes "the posture of indwelling by being at one with the person under investigation and by understanding the respondent's point of view from an empathetic rather than a sympathetic position" (Cavana et al., 2001, p. 135).

'Mixed methods research' has increasingly become the popular term and can better show the facts. 'Mixed method research' is "used as a simple shorthand to stand for research that integrates quantitative and qualitative research within a single project" (Bryman, 2008, p. 628). There are several ways of combining quantitative and qualitative research, such as triangulation, explanation, offset, different research questions, diversity of view, and so forth.

In this research, we adopt the mixed methods to study 3PP service. Triangulation using mixed methods is to establish whether the quantitative and qualitative findings

can corroborate each other. Also, using mixed methods can help the researcher better explain the relationships between variables, and answer different research questions.

#### **4.4.1 Questionnaire**

Questionnaire, as the quantitative research method, is used in this study. This method mainly conducts online survey and e-mail. It is a quick way to get a large sample size.

There are several advantages of conducting online surveys (Bryman, 2008). They are:

- Cheaper to administer
- Quicker to administer
- More convenient for respondents

Interviewing can be expensive. Using online surveys can be a cheap way to get a large sample that is geographically widely dispersed. Moreover, the online surveys can quickly reach the respondents although the surveys cannot all come back immediately. Respondents are able to complete the questionnaire when they want.

Martin (1995) indicates several disadvantages of online surveys: 1) the issue of incompatibilities between different systems; 2) users may not be familiar with a specified system; 3) low response rate; and 4) surveys may be ignored.

Questionnaires have been chosen as the method of conducting this research, the next paragraphs will show the stages of designing and implementing the questionnaires.

##### **4.4.1.1 Questionnaire design**

The questions for the survey are designed for the five-point Likert scale, which is anchored by 1 (Strongly disagree) and 5 (Strongly agree). Blaster et al. (2001) indicate that questionnaires do not need to use too much open-ended questions since the informants cannot take too much time to answer the questions; this is crucial to motivate informants to answer the questionnaire. Other factors also need to be considered in the process of designing a questionnaire. For example, the questionnaire needs to avoid questions that are ambiguous, contain many questions in negative terms, or include sensitive questions.

#### **4.4.1.2 Drafting questionnaire**

Borrowing questions from other studies is acceptable in the draft of a questionnaire (Jones, 2006). The researchers can review similar past research in order to construct the questions regarding 3PP service. The fundamental philosophy of this survey is to identify the relationships between determinants of TCA and 3PP service.

In the steps of organizing questions, the questionnaire needs to follow a logical path and the questions should follow a clear order in order to match related subjects (Czaja and Blair, 1996). The respondents have been asked at least three questions for each research construct to avoid the single-item problem (Churchill, 1979).

All measures are from the aspects of 3PL providers and users. For 3PL provider and user, asset specificity was measured by several items to capture the specificity in terms of coordination with 3PL providers and users, investments in purchasing resources (e.g. time, effort, etc.), products' competitive positioning and ability for leveraging relationships with the customers, and transferring organization routines and working procedures (Larsen, 2000; Rabinovich et al., 2007). Uncertainty measures were adapted from Rabinovich et al. (2007) and Reeves et al. (2010) to capture uncertainty based on ability of demand forecasting, confidence of achieving organization's goals and returning value to the organization, levels of evaluating purchasing performance and degrees of certainty of meeting customers' service requirements, and duration of outsourcing purchasing services. Frequency was mainly measured by the variables of costs and levels of negotiation power to reduce purchasing costs (Goldsby and Eckert, 2003; Maltz, 1993; Hanna and Maltz, 1998; Ellram and Billington, 2001). Transaction size measures primarily focused on ability to combine purchasing orders, the degree of user consolidation, and benefits associated with the size of orders (Ernst and Bas, 2003; Ellram and Billington, 2001; Stump, 1995; Gattorna et al., 1991).

The measures of third party purchase services were adapted from Pring (2006) based on the category of purchasing activities, namely, category management, supplier market research, supplier qualification and selection, request for proposal management, bid preparation and management, cost analysis, and supplier relationship management. Value-to-client was measured by outsourcing cost, flexibility, improvement of service levels, reduction of employee base, helping in core

competence, relationships with 3PL providers, and minimising relevant purchasing risks (Hofer et al., 2009; Sink and Langley, 1997). The measures of benefit-to-provider focused on the perspectives of customer satisfaction, cost savings, employee morale, reliability of consistent service, and degrees of successfully outsourcing purchasing activities and comfortably working with customers (Hofer et al., 2009; Salleh et al., 2009; Knemeyer and Murphy, 2005).

The following paragraphs describe the distribution of questions. The questionnaire has three major sections\*. Section A is about the background information, such as location, industry type, years partnered with 3PL providers or customers, size of the organization, and annual gross sales (Lieb and Randall, 1999; Briggs et al., 2010; Salleh et al., 2009).

Section B is for 3PL users. Question 7 is to rate the importance of services offered by 3PL providers (Lieb and Randall, 1999; Salleh et al., 2009). Question 8 is to mention strengths and weaknesses of outsourcing purchasing perceived by 3PL users (Trent and Monczka, 1998; Salleh et al., 2009). Question 9 to question 12 is about asset specificity. Question 13 to question 16 is regarding uncertainty. Question 17 to question 19 is about frequency. Question 20 to question 22 is regarding size. Question 23 is to indicate the importance of criteria for Request for Proposal (RfP) (Andersson and Norrman, 2002). Question 24 is to highlight the influences on outsourcing the purchasing decision (Spekman et al., 1998). Question 25 is to describe third party purchase activities. Question 26 to question 27 is about value-to-client perceived by 3PL users. Question 28 to question 30 is about benefit-to-provider perceived by 3PL users.

Section C is for 3PL providers. Question 31 is to rate the level of importance of logistics services perceived by 3PL providers. Question 32 to question 33 is to mention the strengths and weaknesses of purchasing services perceived by 3PL providers (Trent and Monczka, 1998; Salleh et al., 2009). Question 34 to question 37 is regarding asset specificity. Question 38 to question 41 is about uncertainty. Question 42 to question 44 is about frequency. Question 45 to question 47 is regarding size. Question 48 is about the importance of criteria of RfP perceived by 3PL providers (Andersson and Norrman, 2002). Question 49 is about the reasons that

---

\* The sample questionnaire is attached in appendix A.

users and potential users find for using the purchasing services as perceived by 3PL providers (Spekman et al., 1998). Question 50 is about third party purchase activities. Question 51 to question 53 is about value-to-client perceived by 3PL providers. Question 54 to question 55 is regarding benefit-to-provider perceived by logistics providers.

#### **4.4.1.3 Pretest questionnaire**

Once designed, and before using the questionnaire to collect data, the researcher needs to conduct pre-tests. There are several types of pre-tests that can be implemented: face validity, content validity, and pilot study (Cavana et al., 2001).

Face validity is to deal with the concern of whether the questionnaire appears to measure the concepts being investigated (Burns, 1994). The researcher makes sure that the respondents can clearly understand the wording of the items. Content validity means the representativeness or sampling adequacy of the questionnaire regarding the content or the theoretical constructs to be measured (Burns, 1994). For the pilot study, the questionnaire is piloted with a sample of respondents who come from the target population (Cavana et al., 2001).

The English version of the questionnaire was developed in two stages. First, a review of existing literature offered the foundation of survey development. Second, the paper-based questionnaire draft was discussed with academic colleagues. After some minor changes, the questionnaire was discussed with middle and senior logistics or purchasing managers. The questionnaire was further refined based on their valuable comments. For the Chinese version of the questionnaire, the original measurement items were developed in English, and both paper-based English and Chinese versions of the questionnaire draft were discussed with colleagues. A consolidated Chinese version was compared with the original English copy to ensure the equivalency of both versions. After some minor changes, the questionnaire was discussed with Chinese logistics and purchasing managers. The researcher adjusted the questionnaire based on their suggestions. Reviews by both academics and practitioners were used to provide face validity (Cook and Campbell, 1979). The Content validity was supported by examples in the literature, and by academics and managers.

#### **4.4.1.4 Delivering the questionnaire**

Electronic and web-based questionnaires were used to collect data. The questionnaires were sent to the respondents by using professional institutes. The details will be covered in the next section.

#### **4.4.2 Interviews**

This researcher conducted face-to-face interviews. The face-to-face interactive process can, under the guidance of the researcher, encourage the interviewee to share valuable experiences and opinions. There are two advantages for face-to-face interviews. First, the researcher can clarify the doubts and ensure that responses are understood by repeating the questions. Second, the researcher can seek non-verbal cues from the informants, such as body language (Cavana et al., 2001)

This research uses semi-structured interviews. The semi-structured interviews are to use a pre-planned and logical approach to manage the interview process (Tregoe, 1983). The interviewer can probe the current situation of 3PL providers and users regarding the perception of 3PP service. The interviewees can share their knowledge and experience based on planned questions. Also, the researcher can identify the preference of the interviewees to implement 3PP service through conducting interactive processes.

In terms of the objectives of the research, the interview questions are closely linked with the questions of the survey since gathering rich information from interviewees can better explain the hypothesized relationships tested by using the quantitative research method. The main questions mention about asset specificity, uncertainty, frequency, transaction size, value-to-client, benefit-to-provider, perception of implementation of 3PP service in future, and so forth.

## 4.5 Data collection

### 4.5.1 Questionnaire

The data comes from two major sources: questionnaire and interview. The data was collected from December, 2010 to October, 2011. Data can be numerical or verbal. Adopting suitable data collection methods helps the researcher to identify the impact of asset specificity, uncertainty, frequency and transaction size on 3PP services, determine the strengths and weaknesses of 3PL providers to implement 3PP services, describe how 3PP service is to be added by 3PL providers, examine the benefits for 3PL providers and users for implementing 3PP services, and gauge the overall perceptions of offering or using 3PP services.

For data collection in China, this study was supported by Chartered Institute of Logistics and Transport (CILT China), China Federation of Logistics & Purchasing, and Tianjin Communication & Logistics Association. Due to privacy protection for their members, these professional associations administered the survey process internally and agreed to distribute our survey to their members. The associations' members have professional qualifications and valuable practical work experience in logistics and purchasing. Subsequently, the online survey link (including electronic documents) with cover letters explaining the purpose of the research have been put on official association websites and the associations helped to encourage the members to complete the survey by using membership newsletters and e-mails. The researcher received 245 usable responses from 3PL providers (response rate of 17.1%) and 242 from 3PL users (response rate of 15.3%). Although it is relatively low, this response rate is comparable to other studies conducted in China (Wang et al., 2010; Lai et al., 2009; Hong et al., 2007; Zhao et al., 2006). "These low response rates are common in South-East Asia and are attributable to numerous structural and cultural factors" (Lai et al., 2009, p.982). The typical response rate in China is from 10 to 15 per cent (Wang et al., 1998).

For data collection in New Zealand, the research was supported by Chartered Institute of Logistics and Transport (CILT New Zealand), Chartered Institute of Purchasing and Supply (CIPS New Zealand), and Centre for Supply Chain Management (CSCM) in New Zealand. For the data collection from CILT and CIPS, the professional

institutions agreed to put the online survey link on their official websites and help us to encourage their members to complete the surveys by using internal newsletters and e-mails. The associations' members have relevant qualifications and real work experiences in logistics and purchasing so they were able to understand the purpose of this study. Contact details for the members of the Centre for Supply Chain Management were permitted by the director of CSCM. The online survey (including electronic documents) was distributed with cover letters explaining the purpose of the research to the members. A total of 166 and 163 useable responses were received from 3PL providers and 3PL users, respectively, representing an effective response rate of 26.6% (3PL providers) and 24.5% (3PL users). It is comparable to other reported response rates under similar circumstances (23.1 response rate by Panayides and So, 2005; 22 percent response rate by Rahman, 2008; 14.8 percent response rate by Cousins et al. 2006; 11.6 percent response rate by Schmoltzi and Wallenburg, 2010). Hence, the response rates for both surveys are considered satisfactory.

#### **4.5.2 Interview**

The interviews were mainly conducted in Tianjin (China), Beijing (China), and Auckland (New Zealand). Beijing is the capital of China, and a lot of headquarters of organizations are located in Beijing. Many exports from and imports for Beijing need to come through the port of Tianjin. It only takes 20 minutes to get to Tianjin from Beijing by high-speed train, so the relations between the two cities are very close. Auckland is the largest city in New Zealand. There are a lot of logistics companies close to the airport. Also, Auckland has the major port for importing and exporting.

Based on personal contacts and colleagues' assistance, the respondents were contacted by e-mail or telephone in order to ensure the interview date, time and place. Also, the researcher sent the participation information sheet and sample of questions to the respondents prior to the interviews. In China, the researcher conducted 18 interviews (9 interviews from 3PL providers and 9 interviews from 3PL users). In New Zealand, the researcher conducted 17 interviews (11 interviews from 3PL providers and 6 interviews from 3PL users).

## 4.6 Analysing data

For the quantitative data (questionnaire) a method of structure equation modelling (SEM) is used for statistical analysis to test hypothesized relationships between the determinants of TCA and 3PP services, using SPSS and AMOS software. Non-response bias and common method variance are also tested prior to data analysis (Armstrong and Overton, 1977; Podsakoff and Organ, 1986).

SEM is a multivariate technique “combining aspects of factor analysis and multiple regression that enables the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and latent constructs as well as between several latent constructs” (Hair et al., 2010, p. 634). There are three major characteristics of using SEM (Hair et al., 2010). An ability to:

- Estimate multiple and interrelated dependence relationships
- Represent unobserved concepts in these relationships and account for measurement error in the estimation process
- Define a model to explain the entire set of relationships

Hair et al. (2010) state that reporting the  $\chi^2$  value and degrees of freedom, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) usually provides sufficient information to assess a model. The values of CFI, TLI, and IFI between 0.80 and 0.89 represent a reasonable fit (Segars and Grover, 1998; Shevlin et al., 2000) and the values of over 0.90 represents a good fit (Byrne, 1989; Papke-Shields et al., 2002; Hooper et al., 2008; Wiengarten et al., 2010). The value of RMSEA is below 0.08 indicating a good fit (MacCallum et al., 1996). The Chi-Square value would offer an insignificant result at less than 0.05 (Barrett, 2007).

For the normality test, the Shapiro-Wilk test was used to test the normality of data (Hair et al., 2010). Since the  $p$ -values are all greater than 0.05, we do not have sufficient reason to reject the hypothesis that the data comes from a normal distribution.

The qualitative interview data is analysed by using Nvivo computing software. Nvivo is designed to support the researcher to use the computer for recording, sorting, matching, and linking, and can help the researcher in answering the research questions. For instance, the researcher can manage data in order to organize and keep track of a

lot of records, such as interview data. Also, the researcher can ask simple or complex questions of the data, and save the results in order to allow further interrogation (Bazeley, 2007).

#### **4.7 Chapter conclusion**

This chapter mainly discusses methodology for this research. The main methods adopted in this study are questionnaire and interview. The survey data collection is from professional institutes and the interview data is collected based on personal contacts and colleagues' assistance. Structural equation modelling is used to analyse the quantitative data and Nvivo software helps the researcher accurately analyse the qualitative data. The details of quantitative and qualitative data analysis will be shown in the next chapter.

## **Chapter 5 - Data analysis**

This section presents the analysis of the quantitative and qualitative data collected from China and New Zealand. The first section mentions the data analysis for China data, and the second section discusses the analysis for New Zealand data.

### **5.1 Data analysis of data collected in China – 3PL providers and users**

Prior to conducting data analysis, the researcher examines whether there is non-response bias and common-method variance in the two datasets (3PL providers and users). Non-response bias was assessed by following the procedure suggested by Armstrong and Overton (1977). In terms of demographic variables (years partnered with 3PL providers or customers, firm size, and annual gross sales), the researcher compared the survey of the first 10 per cent of respondents with those of the last 10 per cent of respondents using a t-test. The results of the t-test showed no statistical significance between the two groups in terms of the means for items (Tables 5-1 and 5-2). This was done for data sets of the 3PL providers and users.

Common-method variance was tested by using the Harman one-factor test (Podsakoff and Organ, 1986). In this test, all items making up the constructs were entered into a principal components factor analysis with VARIMAX rotation (Gotzamani et al., 2010). Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy for both samples were higher than 0.5 (Kaiser, 1970), which was 0.761 for 3PL providers and 0.886 for 3PL users, and Bartlett's Test of Sphericity was significant ( $p < 0.001$ ) in both samples (Bartlett, 1950), suggesting the suitability for factor analysis. In the data of 3PL providers, 7 factors were extracted accounting for 69.41 percent of the variance while factor one accounted for 17.51 percent of the variance. In the data of 3PL users, the results showed that 7 factors were responsible for 68.06 percent of the variance while the contribution of the first factor was 14.66 percent; the conclusion is that common-method variance is not a problem with the two types of data (Tables 5-3 and 5-4).

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
CLYear	Equal variances assumed	0.86	0.358	1.15	48	<b>0.256</b>	0.36	0.313	-0.269	0.989	
	Equal variances not assumed			1.15	47.275	<b>0.256</b>	0.36	0.313	-0.27	0.99	
CLSize	Equal variances assumed	0.229	0.634	0.858	48	<b>0.395</b>	0.28	0.326	-0.376	0.936	
	Equal variances not assumed			0.858	47.287	<b>0.395</b>	0.28	0.326	-0.376	0.936	
CLSales	Equal variances assumed	0.021	0.886	-0.129	48	<b>0.898</b>	-0.04	0.309	-0.662	0.582	
	Equal variances not assumed			-0.129	47.584	<b>0.898</b>	-0.04	0.309	-0.662	0.582	

**Table 5-1: Non-response bias for the sample of China 3PL providers**

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
CUYear	Equal variances assumed	0.072	0.79	-0.649	46	<b>0.52</b>	-0.208	0.321	-0.855	0.438	
	Equal variances not assumed			-0.649	45.654	<b>0.52</b>	-0.208	0.321	-0.855	0.438	
CUSize	Equal variances assumed	0.184	0.67	0.496	46	<b>0.623</b>	0.125	0.252	-0.383	0.633	
	Equal variances not assumed			0.496	45.869	<b>0.623</b>	0.125	0.252	-0.383	0.633	
CUSales	Equal variances assumed	1.045	0.312	-0.796	46	<b>0.43</b>	-0.375	0.471	-1.324	0.574	
	Equal variances not assumed			-0.796	45.657	<b>0.43</b>	-0.375	0.471	-1.324	0.574	

**Table 5-2: Non-response bias for the sample of China 3PL users**

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.246	18.09	18.09	5.246	18.09	18.09	5.077	17.505	17.505
2	3.761	12.969	31.059	3.761	12.969	31.059	3.399	11.72	29.225
3	2.967	10.23	41.289	2.967	10.23	41.289	2.642	9.111	38.336
4	2.709	9.343	50.632	2.709	9.343	50.632	2.64	9.102	47.438
5	2.26	7.792	58.424	2.26	7.792	58.424	2.541	8.763	56.201
6	1.734	5.98	64.404	1.734	5.98	64.404	2.041	7.037	63.239
7	1.452	5.006	69.409	1.452	5.006	69.409	1.789	6.171	69.409
8	0.854	2.947	72.356						
9	0.83	2.863	75.219						
10	0.715	2.466	77.685						
11	0.633	2.182	79.867						
12	0.595	2.051	81.918						
13	0.555	1.914	83.832						
14	0.527	1.818	85.65						
15	0.494	1.704	87.353						
16	0.462	1.593	88.947						
17	0.445	1.534	90.481						
18	0.406	1.4	91.881						
19	0.394	1.358	93.238						
20	0.355	1.225	94.463						
21	0.298	1.027	95.49						
22	0.267	0.92	96.41						
23	0.245	0.846	97.256						
24	0.201	0.693	97.949						
25	0.178	0.615	98.564						
26	0.141	0.487	99.051						
27	0.099	0.343	99.394						
28	0.092	0.317	99.711						
29	0.084	0.289	100						

Extraction Method: Principal Component Analysis.

**Table 5-3: Common-method variance for the sample of China 3PL providers**

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.983	33.277	33.277	9.983	33.277	33.277	4.399	14.662	14.662
2	2.708	9.026	42.303	2.708	9.026	42.303	3.837	12.79	27.453
3	2.254	7.513	49.816	2.254	7.513	49.816	2.876	9.587	37.04
4	1.686	5.621	55.436	1.686	5.621	55.436	2.606	8.685	45.725
5	1.42	4.733	60.169	1.42	4.733	60.169	2.342	7.805	53.53
6	1.332	4.44	64.609	1.332	4.44	64.609	2.326	7.754	61.284
7	1.036	3.452	68.061	1.036	3.452	68.061	2.033	6.777	68.061
8	0.859	2.863	70.924						
9	0.687	2.292	73.216						
10	0.648	2.159	75.375						
11	0.636	2.12	77.494						
12	0.598	1.994	79.489						
13	0.557	1.857	81.346						
14	0.538	1.794	83.14						
15	0.498	1.662	84.801						
16	0.442	1.473	86.274						
17	0.436	1.455	87.729						
18	0.399	1.331	89.06						
19	0.384	1.278	90.339						
20	0.362	1.207	91.546						
21	0.359	1.197	92.743						
22	0.341	1.138	93.881						
23	0.295	0.984	94.865						
24	0.274	0.912	95.776						
25	0.267	0.891	96.667						
26	0.242	0.808	97.475						
27	0.237	0.789	98.264						
28	0.218	0.726	98.99						
29	0.155	0.516	99.506						
30	0.148	0.494	100						

Extraction Method: Principal Component Analysis.

**Table 5-4: Common-method variance for the sample of China 3PL users**

## **5.1.1 Quantitative data analysis– Questionnaires**

### **5.1.1.1 Overview of respondent profiles – China 3PL providers and users**

The demographics of the surveyed companies are presented in Table 5-5. For the survey of 3PL providers, all respondents are from the industry of logistics. In the user sample, 14.9 percent of the respondents are from the mechanical manufacturing industry, and 14.5 percent of the respondents are from retail/wholesale industry. Interestingly, there are 21.9 percent of the respondents in “other” industries\*.

The majority of the relationships have been in place for 2-15 years (76.8 percent in the 3PL sample and 70.6 percent in the user sample), but there are also a number of relationships of more than 15 years (16.3 percent in the 3PL sample and 3.7 percent in the user sample). About 3.3 percent employed less than 50 full-time staff in the 3PL sample and, in the user sample, around 28.1 percent employed less than 50 full-time staff. The respondents were asked to indicate the annual gross sales. More than 50 percent of respondents in the sample of 3PL providers indicated that the annual gross sales are more than RMB 50 million, and 34.3 percent of respondents in the sample of 3PL users show that their annual gross revenues are less than RMB 25 million.

As shown in Table 5-6, transportation and warehousing services are the most important outsourcing activities perceived by both parties. The services of purchasing and consolidation & distribution are perceived equally by 3PL providers. 3PL users also rate the third position of importance to purchasing. Product return is the least commonly outsourced or performed function.

---

\* This is because the questionnaire provides for only 12 industry categories. Some categories are not included in the survey listed by the National Bureau of Statistics of China (2003), such as forestry, fishery, tobacco, coal, telecom, finance, banking, environment management, etc.

## Data analysis

Firm characteristics	Firm Group	Percentage		Percentage	
		(3PL providers)	Total percent	(3PL users)	Total percent
Industry	Logistics	100	50.30	-	-
	Retail/Wholesale	-	-	14.5	7.19
	Agriculture	-	-	3.3	1.64
	Construction	-	-	6.2	3.08
	Mechanical manufacturing	-	-	14.9	7.39
	Petrochemical	-	-	5	2.46
	Electrical/Engineering	-	-	5	2.46
	Electronics	-	-	4.1	2.05
	Food/Beverage/Wine	-	-	7.4	3.7
	Textile and Apparel	-	-	9.1	4.52
	Public admin/Health	-	-	4.5	2.26
	Education	-	-	4.1	2.05
Other	-	-	21.9	10.88	
Age of firms partnered with 3PL providers or customers	Less than or equal to 2 years	6.9	3.49	25.6	12.73
	More than 2 years but less than or equal to 5 years	11.4	5.75	28.9	14.37
	More than 5 years, but less than or equal to 10 years	27.8	13.96	31	15.4
	More than 10 years, but less than or equal to 15 years	37.6	18.89	10.7	5.34
	More than 15 years	16.3	8.21	3.7	1.85
Number of employees	Less than 50	3.3	1.64	28.1	13.96
	51-100	9.8	4.93	29.8	14.78
	101-500	33.1	16.63	40.1	19.92
	501-1000	29	14.58	1.2	0.62
	1001-2000	15.1	7.6	0.8	0.41
	Over 2000	9.8	4.93	-	-
Annual gross sales	Less than or equal to RMB 25 million	6.9	3.49	34.3	17.04
	More than RMB 25 million, but less than or equal to RMB 50	14.7	7.39	22.3	11.09
	More than RMB 50 million, but less than or equal to RMB 75	12.7	6.37	12.8	6.37
	More than RMB 75 million, but less than or equal to RMB 100	22.9	11.5	11.2	5.54
	More than RMB 100 million	42.9	21.56	19.4	9.65

**Table 5-5: Company profile for Chinese firms**

Activity	Percentage	
	3PL providers	3PL users
Transportation	90.61	76.86
Warehousing	83.27	52.07
Purchasing	81.22	53.72
Consolidation and distribution	81.22	48.35
Inventory management	70.61	50.00
Product returns	47.35	38.02
Order management	70.61	48.76
Cross docking	67.76	33.47
Packaging	69.8	47.93

**Table 5-6: Perceived levels of importance of logistics activities performed (China 3PL providers) or outsourced (China 3PL users)**

#### **5.1.1.2 Measurement model – China 3PL providers**

After data collection, the researcher performed a series of analyses to test the reliability and validity of the constructs. SPSS and AMOS 19 were used for statistical analysis.

##### *Unidimensionality and reliability*

A rigorous process for scale development was employed because the scales were being used in a different national culture than the Western culture where they are developed. Based on Narasimhan and Jayaram (1998), the researcher followed the two-step method to test construct reliability. First, the researcher used exploratory factor analysis (EFA) to ensure unidimensionality of the scales (Zhao et al., 2008). Second, the researcher used Cronbach's Alpha ( $\alpha$ ) to assess reliability. EFA was used with principal components analysis for data reduction and determining the main constructs measured by the items. Varimax rotation with Kaiser normalization was used to clarify the factors (Loehlin, 1998). Cronbach's Alpha ( $\alpha$ ) was computed for each construct in order to test for internal consistency.

Table 5-7 shows that each construct in the sample of 3PL providers has at least three measured variables to be explained. All factor loadings are above 0.5 (Hair et al., 2010).

	<b>3PL providers</b>						
	Procurement	Benefit to 3PL provider	Asset specificity	Uncertainty	Value to client	Frequency	Size
CL-Cord	-.061	-.047	<b>.863</b>	.062	-.005	-.062	.021
CL-Inves	-.004	-.091	<b>.811</b>	.010	.081	-.171	-.020
CL-Leve	.000	-.031	<b>.767</b>	.140	-.060	.034	-.009
CL-Rout	-.048	-.139	<b>.735</b>	-.036	-.034	.195	.064
CL-Demo	.015	.007	-.032	<b>.810</b>	-.035	.016	.029
CL-Conf	.083	-.031	-.049	<b>.861</b>	.008	-.040	.090
CL-Eva	.027	-.085	.149	<b>.793</b>	-.012	.017	.039
CL-Period	.065	-.008	.112	<b>.685</b>	.020	.141	.060
CL-Fix	.038	-.041	-.025	.019	.133	<b>.776</b>	.103
CL-Moni	-.123	.103	-.026	.052	-.055	<b>.765</b>	-.100
CL-FreInc	.091	-.039	.042	.066	.069	<b>.772</b>	.159
CL-PurcOrd	.107	.014	.013	.070	.119	.075	<b>.791</b>
CL-Conso	.003	.075	.119	-.085	.363	.152	<b>.692</b>
CL-OrdLag	.011	-.020	-.049	.228	-.163	-.022	<b>.746</b>
CL-PA-Cat	<b>.768</b>	-.096	-.079	-.051	-.006	-.089	-.080
CL-PA-Mgk	<b>.874</b>	.032	-.011	.021	.035	.110	.050
CL-PA-Qua	<b>.822</b>	.023	.056	.117	-.020	-.020	.144
CL-PA-Pro	<b>.889</b>	-.014	-.021	.027	.047	-.065	.065
CL-PA-Bid	<b>.885</b>	-.025	-.092	-.002	.024	-.077	-.017
CL-PA-Cos	<b>.854</b>	.030	-.019	.095	.122	.017	-.014
CL-PA-Sup	<b>.816</b>	.083	.029	.049	.056	.141	.038
CL-Risk	.073	-.038	-.064	-.009	<b>.803</b>	.010	.080
CL-MaiRel	.042	.063	.007	.035	<b>.814</b>	.153	.088
CL-CorBus	.085	-.078	.026	-.033	<b>.837</b>	-.026	.000
CL-OP-Sat	-.006	<b>.752</b>	-.060	-.053	.331	.151	.040
CL-OP-Cost	-.060	<b>.785</b>	-.030	-.106	.240	.138	.061
CL-OP-Mora	.053	<b>.862</b>	-.105	-.002	-.267	-.078	.032
CL-OP-Rel	.065	<b>.836</b>	-.093	-.023	-.239	-.052	.031
CL-Comfor	-.019	<b>.827</b>	-.073	.028	-.049	-.087	-.082
Total variance explained				69.41%			

**Table 5-7: Exploratory factor analysis for China 3PL providers**

Confirmatory factor analysis (CFA) using maximum-likelihood estimation was performed to further justify the factor structure. Reporting the  $\chi^2$  value and degrees of freedom, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) usually provides sufficient information to evaluate a model (Hair et al., 2010). In addition, incremental fit index (IFI) and Tucker-Lewis Index (TLI) will be reported as well.

The values of CFI, TLI, and IFI between 0.80 and 0.89 represents a reasonable fit (Segars and Grover, 1998; Shevlin et al., 2000) and scores of 0.90 or higher are evidence of good fit (Byrne, 1989; Papke-Shields et al., 2002; Hooper et al., 2008; Wiengarten et al., 2010). The scores of RMSEA are below 0.08 indicating a good fit (MacCallum et al., 1996). The Chi-Square value would provide an insignificant result at less than 0.05 (Barrett, 2007), so the Chi-Square statistic is usually referred to as either a ‘badness of fit’ (Kline, 2005) or a ‘lack of fit’ (Mulaik et al., 1989). Byrne (2001) indicates that the Chi-Square fit index has been demonstrated to be unrealistic in most structural equation modelling research. Due to the limitations of the Chi-Square fit index, researchers choose alternative indices to evaluate model fit, such as normed (relative) Chi-Square ( $\chi^2/df$ ). The value of normed Chi-Square less than 3.0 means a reasonable fit and a value less than 2.0 illustrates a good fit (Segars and Grover, 1998; Papke-Shields et al., 2002; Bollen, 1989).

The model fit indices for 3PL providers are  $\chi^2(345) = 520.535$ ,  $p < 0.001$ ; CFI = 0.96; IFI = 0.96; TLI = 0.95; and, RMSEA = 0.046. Although the  $\chi^2$ -value in the sample of 3PL providers is significant, the normed Chi-Square score for the sample is below the recommended value, which is 1.509 for 3PL providers, indicating that the model is acceptable. Hair et al. (2010) point out that standardized factor loadings should be at least 0.50. All factor loadings were greater than 0.50 and significant at  $p$ -value less than 0.001. Cronbach’s Alpha ( $\alpha$ ) reliability estimate was used to measure the internal consistency of the multivariate scales (Nunnally, 1978). In this study, Cronbach’s Alpha ( $\alpha$ ) values in the sample of 3PL provider are greater than 0.70, which showed that there is good reliability of the survey instrument (Nunnally, 1978). The composite reliability and variance extracted\* in the sample of 3PL providers are greater than 0.70

---

\* Construct reliability =  $\frac{\sum(\text{Standardized loading})^2}{\sum(\text{Standardized loading})^2 + \sum \epsilon_j}$  Variance extracted =  $\frac{\sum(\text{Standardized loading})^2}{\sum(\text{Standardized loading})^2 + \sum \epsilon_j}$

and 0.50 respectively (Hair et al, 1998). Thus, convergent validity is established (Table 5-8).

Construct	Indicator	Standardized weight	Cronbach's alpha	Composite reliability	Variance extracted
AS	CLRout	0.635	0.816	0.820	0.537
	CLLeve	0.666			
	CLInves	0.729			
	CLCord	0.878			
UN	CLPeriod	0.51	0.809	0.829	0.558
	CLEva	0.659			
	CLConf	0.89			
	CLDemo	0.754			
FR	CLFreInc	0.679	0.802	0.794	0.567
	CLMoni	0.537			
	CLFix	0.751			
SZ	CLOrdlag	0.501	0.813	0.813	0.596
	CLConso	0.694			
	CLPurcOrd	0.681			
Procu	CLPAQua	0.816	0.934	0.947	0.722
	CLPAMgk	0.894			
	CLPACat	0.583			
	CLPAPro	0.955			
	CLPABid	0.741			
	CLPACos	0.768			
	CLPASup	0.791			
VTC	CLCorbus	0.786	0.803	0.912	0.775
	CLMaiRel	0.754			
	CLRisk	0.754			
BT3PL	CLOPMora	0.969	0.876	0.928	0.734
	CLOPCost	0.508			
	CLOPSat	0.516			
	CLOPRel	0.923			
	CLComfor	0.736			

Notes:  $\chi^2(345) = 520.535$ ,  $\chi^2/df = 1.509$ , CFI = 0.96, RMSEA = 0.046. All are significant ( $p < 0.001$ ).

**Table 5-8: Cronbach's Alpha ( $\alpha$ ) and composite reliability for China 3PL providers**

### Validity

Fornell and Larcker (1981) propose a rigorous validity test that compares the average variance-extracted values for any two constructs with the square of the correlation estimate between these two constructs. The idea is based on that a latent construct

should explain more of the variance in its item measures that it shares with another construct.

In table 5-9, the values in diagonal line are from variance extracted. In each column, the values are the correlation estimate between every two constructs. Based on the computations, for instance,  $(0.537+0.558)/2-(0.41)^2 = 0.380^*$ . Inter-correlations between the constructs are moderate, suggesting that items assigned to one construct were not significantly highly loading on others. Thus, discriminant validity is established in the sample of China 3PL providers (Table 5-9).

	<b>AS</b>	<b>UN</b>	<b>FR</b>	<b>SZ</b>	<b>PROCU</b>	<b>VTC</b>	<b>BT3PL</b>
<b>AS</b>	0.537						
<b>UN</b>	0.41*	0.558					
<b>FR</b>	0.033	0.44*	0.567				
<b>SZ</b>	0.232**	0.163*	0.302**	0.596			
<b>PROCU</b>	0.063*	0.117**	0.039*	0.152**	0.722		
<b>VTC</b>	0.001**	0.003*	0.186*	0.362***	0.17**	0.775	
<b>BT3PL</b>	0.182*	0.025**	0.053*	0.005*	0.041*	0.233**	0.734

Note: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

**Table 5-9: Discriminant validity for China 3PL providers**

\* The figure is above 0, representing that the item loading on one construct would not significantly load on the others. All figures were computed, and they were above 0.

### 5.1.1.3 Structural equation model – China 3PL providers

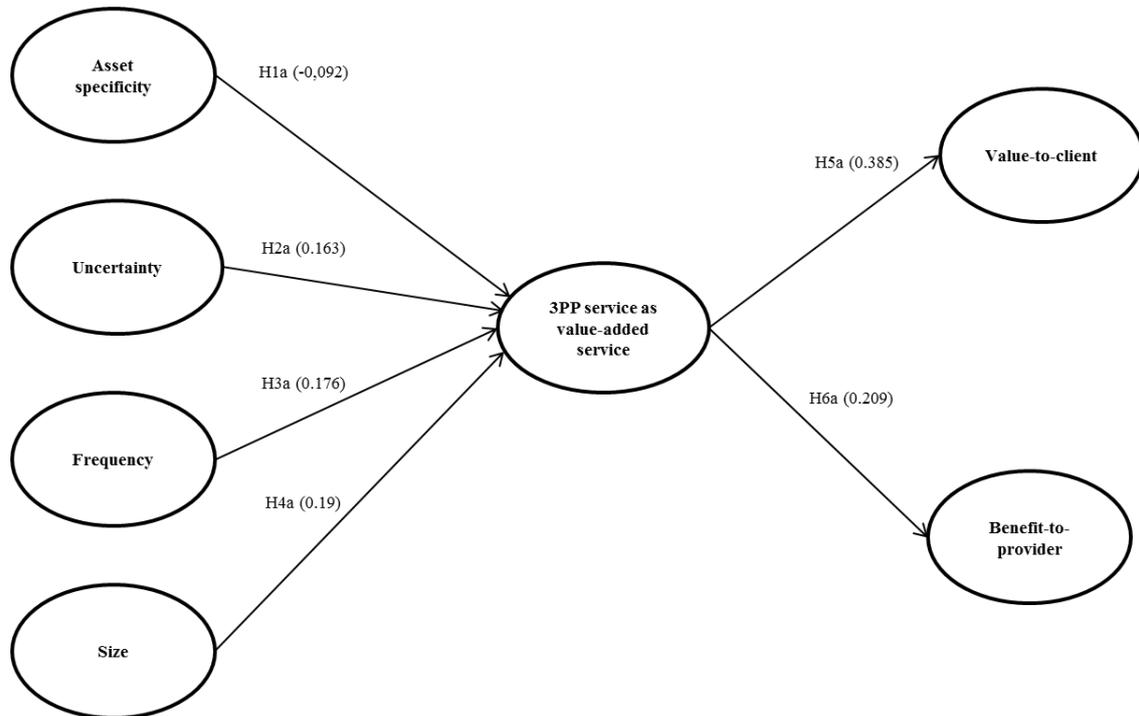
Given the overall sound assessment of the measurement model, this section focuses on the structural model and testing of the hypothesized relationships. AMOS 19 was used for the SEM analysis. Individual hypotheses were assessed by reviewing the direction and significance in the AMOS output.

The proposed structural model was analysed with AMOS 19 to test the hypothesized relationships. The fit statistics indicate that the hypothesised structural model achieves acceptable fit for the sample of 3PL providers ( $\chi^2 (367) = 810.903$ ,  $p < 0.001$ ; the normed Chi-Square = 2.210; CFI = 0.92; IFI = 0.92; TLI = 0.91; and, RMSEA = 0.054). AMOS outputs on the hypothesized paths' standardized regression weights with relevant critical ratio (CR) and  $p$ -values were then examined to test the individual hypotheses. Table 5-10 provides the results of the structural model test.

In the sample of 3PL provider (H1a – H6a), uncertainty, frequency, and size have a significant influence on procurement ( $b = 0.163, 0.176, 0.19$  respectively;  $p < 0.01$ ). These results confirm our theoretical expectation and provide support for H2a, H3a, and H4a. However, the path loading ( $b = -0.092$ ; ns) from asset specificity to procurement is not significant, suggesting rejection for H1a. The path from procurement to value-to-client is highly significant ( $b = 0.385$ ;  $p < 0.001$ ). This is consistent with our theoretical expectation that procurement significantly influences value-to-client, supporting H5a. The impact of procurement on benefit-to-provider is also significant ( $b = 0.209$ ;  $p < 0.001$ ), suggesting support for H6a.

Path		Standardized weight	CR	<i>p</i>	Note
H1a	Asset specificity → Procurement	-0.092	-1.674	0.094	Not significant
H2a	Uncertainty → Procurement	0.163	2.875	0.004 < 0.01	Supported
H3a	Frequency → Procurement	0.176	2.866	0.004 < 0.01	Supported
H4a	Size → Procurement	0.19	3.285	0.001 < 0.01	Supported
H5a	Procurement → Value-to-client	0.385	7.014	< 0.001	Supported
H6a	Procurement → Benefit-to-provider	0.209	3.823	< 0.001	Supported

**Table 5-10: Hypothesized path testing for China 3PL data**



**Figure 5-1: Structure equation model for China 3PL providers**

#### 5.1.1.4 Measurement model – China 3PL users

The analysis process for China 3PL users is the same as the procedure for China 3PL providers. This section will report the results using SPSS and AMOS 19.

##### *Unidimensionality and reliability*

According to table 5-11, each construct in the sample of 3PL users has at least three measured variables to be explained. All factor loadings are above 0.5 (Hair et al., 2010).

	3PL users						
	Procurement	Value to client	Asset specificity	Uncertainty	Frequency	Benefit to 3PL provider	Size
CU-Cord	.202	.006	<b>.662</b>	.212	.081	.327	.080
CU-ComPos	.058	.236	<b>.802</b>	.052	.106	.009	.230
CU-TimEff	.056	.045	<b>.801</b>	.120	.133	.050	.047
CU-Rout	.072	.235	<b>.755</b>	.081	.144	.133	.129
CU-Demo	.104	.121	.101	<b>.786</b>	.107	.187	.014
CU-Conf	.221	.064	.276	<b>.668</b>	.034	.238	.189
CU-Req	.242	.118	.181	<b>.687</b>	.242	.206	.096
CU-Const	.157	.180	.001	<b>.706</b>	.122	.110	.194
CU-OrdFr	.097	.124	.136	.281	<b>.705</b>	.292	.033
CU-Moni	.149	.261	.215	.087	<b>.786</b>	-.121	.098
CU-FreInc	.059	.215	.135	.116	<b>.847</b>	.123	.156
CU-Bene	.176	.149	.190	.182	-.016	.045	<b>.775</b>
CU-Vol	.094	.114	.088	.137	.411	.313	<b>.644</b>
CU-Conso	.130	.266	.184	.132	.128	.076	<b>.724</b>
CU-PA-Cat	<b>.727</b>	.059	.061	.158	.011	.025	.188
CU-PA-Mgk	<b>.682</b>	.303	.108	.089	.090	.020	.056
CU-PA-Qua	<b>.693</b>	.254	.229	.063	.090	.114	-.023
CU-PA-Pro	<b>.808</b>	.180	.062	.113	.093	.092	-.041
CU-PA-Bid	<b>.788</b>	.056	.018	.064	.103	.023	.166
CU-PA-Cos	<b>.746</b>	.116	-.079	.193	.058	.209	.090
CU-PA-Sup	<b>.684</b>	.219	.120	.096	-.034	.222	.066
CU-SO-Cos	.159	<b>.644</b>	.138	-.014	.126	-.102	.337
CU-SO-Fle	.195	<b>.745</b>	.040	.216	.070	.053	.149
CU-SO-Ser	.194	<b>.793</b>	.030	.157	.090	.095	.157
CU-SO-Emp	.249	<b>.713</b>	.237	.154	.130	.222	-.051
CU-SO-Com	.218	<b>.768</b>	.044	-.001	.179	.105	.110
CU-MaiRel	.126	<b>.648</b>	.280	.104	.176	.232	.003
CU-ShaPur	.297	.135	.137	.173	.035	<b>.678</b>	.042
CU-SucOut	.072	.130	.082	.212	.172	<b>.769</b>	.196
CU-ComWor	.139	.125	.159	.230	.040	<b>.727</b>	.032
Total variance explained				68.06%			

**Table 5-11: Exploratory factor analysis for China 3PL users**

In the CFA model, the research used maximum-likelihood estimation to demonstrate the factor structure. The model fit indices for 3PL users are  $\chi^2(376) = 642.019$ ,  $p < 0.001$ ; the normed Chi-Square = 1.707; CFI = 0.93; IFI = 0.93; TLI = 0.92; and, RMSEA = 0.054. Although the  $\chi^2$ -values in both samples are significant, the normed Chi-Square scores for both sample are below the recommended value ( $< 2.0$ ), indicating that the model was acceptable. All factor loadings were greater than 0.50 and highly significant at  $p$ -value less than 0.001. Cronbach's Alpha ( $\alpha$ ) values were greater than 0.70. The composite reliability and variance extracted were greater than 0.70 and 0.50 respectively (Hair et al, 1998). Thus, convergent validity is established (Table 5-12).

Construct	Indicator	Standardized weight	Cronbach's alpha	Composite reliability	Variance extracted
AS	CURout	0.781	0.831	0.863	0.614
	CUTimEff	0.688			
	CUComPos	0.879			
	CUCord	0.712			
UN	CUConst	0.63	0.817	0.866	0.621
	CUReq	0.814			
	CUConf	0.746			
	CUDemo	0.655			
FR	CUFreInc	0.873	0.824	0.864	0.729
	CUMoni	0.781			
	CUOrdFr	0.704			
SZ	CUConso	0.724	0.766	0.835	0.700
	CUVol	0.74			
	CUBene	0.707			
PROCU	CUPAQua	0.805	0.891	0.897	0.556
	CUPAMgk	0.722			
	CUPACat	0.678			
	CUPAPro	0.764			
	CUPABid	0.728			
	CUPACos	0.792			
	CUPASup	0.709			
BT3PL	CUComWor	0.69	0.757	0.821	0.605
	CUSucOut	0.745			
	CUShaPur	0.71			
VTC	CUSOSer	0.804	0.880	0.901	0.604
	CUSOFle	0.79			
	CUSOCos	0.657			
	CUSOEmp	0.845			
	CUSOCom	0.752			
	CUMaiRel	0.685			

Notes:  $\chi^2(376) = 642.019$ ,  $\chi^2/df = 1.707$ , CFI = 0.93, RMSEA = 0.054. All are significant ( $p < 0.001$ ).

**Table 5-12: Cronbach's Alpha ( $\alpha$ ) and composite reliability for China 3PL users**

*Validity*

The computation of validity for China 3PL users is the same as the procedure for China 3PL provider, which has been mentioned in earlier section. According to table 5-13, all figures were computed, and they were above 0, representing that the items assigned to one construct were not significantly loading on other constructs. Therefore, discriminant validity is established in the sample of 3PL users.

	<b>AS</b>	<b>UN</b>	<b>FR</b>	<b>SZ</b>	<b>PROCU</b>	<b>VTC</b>	<b>BT3PL</b>
<b>AS</b>	0.614						
<b>UN</b>	0.483***	0.621					
<b>FR</b>	0.463***	0.499***	0.729				
<b>SZ</b>	0.536***	0.522***	0.493***	0.700			
<b>PROCU</b>	0.33***	0.508***	0.329***	0.442***	0.556		
<b>VTC</b>	0.458***	0.49***	0.386***	0.501***	0.487***	0.605	
<b>BT3PL</b>	0.461***	0.498***	0.519***	0.535***	0.541***	0.48***	0.604

Note: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

**Table 5-13: Discriminant validity for China 3PL users**

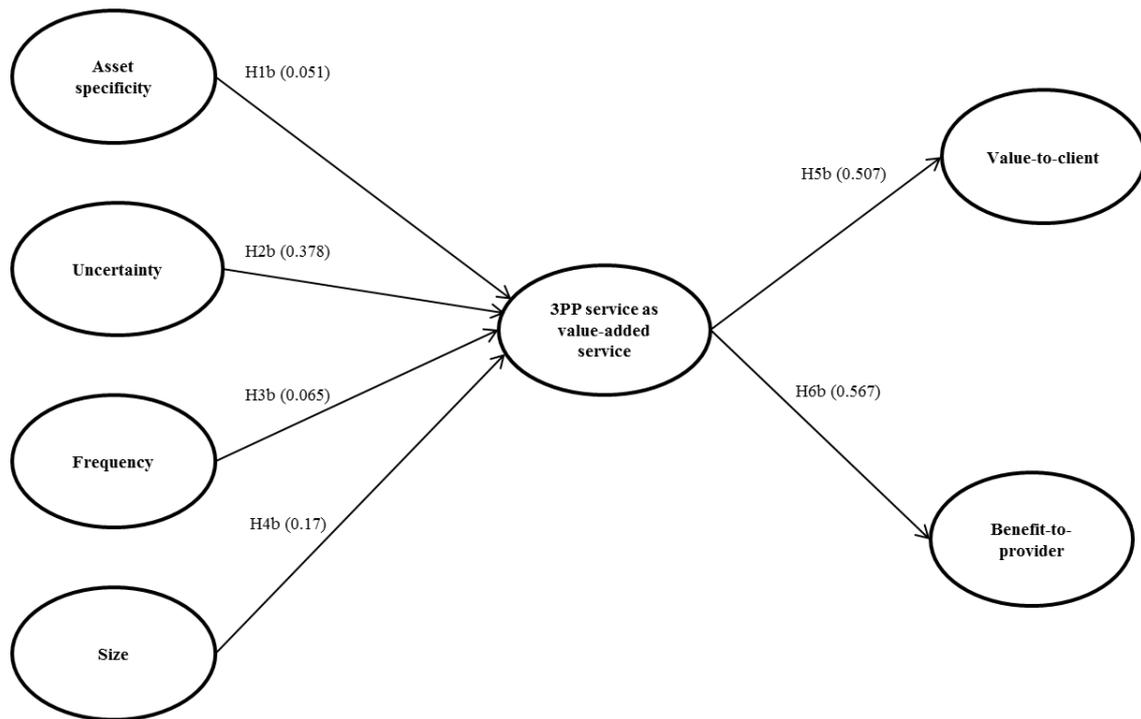
### 5.1.1.5 Structural equation model – China 3PL users

The proposed structural model was analysed with AMOS 19 to test the hypothesized relationships. The fit statistics show that the structural model for 3PL users is acceptable ( $\chi^2$  (391) = 791.279,  $p < 0.001$ ; the normed Chi-Square = 2.024; CFI = 0.90; IFI = 0.90; TLI = 0.89; and, RMSEA = 0.065). AMOS outputs on the hypothesized paths' standardized regression weights with relevant critical ratio (CR) and  $p$ -values were then examined to test the individual hypotheses. Table 5-14 provides the results of the structural model test.

In the sample of 3PL users (H1b – H6b), uncertainty has a significant influence on procurement ( $b = 0.378$ ;  $p < 0.001$ ), supporting H2b. However, the path loadings from asset specificity, frequency, and size to procurement are not significant ( $b = 0.051$ ,  $b = 0.065$ ,  $b = 0.17$ , ns), suggesting rejection for H1b, H3b, and H4b. The impacts of procurement on value-to-client and benefit-to-provider are significant ( $b = 0.507$  and  $0.567$ ;  $p < 0.001$ ). These results confirm our theoretical expectation and offer support for H5b and H6b.

Path	Standardized weight	CR	$p$	Note
H1b Asset specificity → Procurement	0.051	0.658	0.511	Not significant
H2b Uncertainty → Procurement	0.378	3.831	< 0.001	Supported
H3b Frequency → Procurement	0.065	0.834	0.404	Not significant
H4b Size → Procurement	0.17	1.73	0.084	Not significant
H5b Procurement → Value-to-client	0.507	7.015	< 0.001	Supported
H6b Procurement → Benefit-to-provider	0.567	8.523	< 0.001	Supported

**Table 5-14: Hypothesized path testing for China 3PL users**



**Figure 5-2: Structural equation model for China 3PL users**

### 5.1.2 Qualitative data analysis – Interviews

The objective in analysing interview data is to qualitatively triangulate and validate the earlier quantitative findings, and also give more in-depth explanations of findings generated by the quantitative method. Possibly, analysing interview data obtains additional factors that may not be explained and included in the research model (*the in-depth discussion will be in the discussion chapter*). The following sections briefly describe the company profile of the interviewees, explain the procedures of data analysis for both samples (3PL providers and users), describe the analysis of perceptions for China 3PL providers and users, and summarize the key findings from both parties.

#### 5.1.2.1 Company profiles - China 3PL providers and users

##### China - 3PL providers (CL)\*

Code used in text	Official position	Location of Head office in China	Industrial types
CL-A	General Manager	Tianjin	Logistics
CL-B	Regional Manager	Hangzhou	Logistics
CL-C	IE Director	Beijing	Logistics
CL-D	Regional Manager	Beijing	Logistics
CL-E	General Manager	Tianjin	Logistics
CL-F	Department Manager	Shanghai	Logistics
CL-G	Managing Director	Tianjin	Logistics
CL-H	Department Manager	Tianjin	Logistics
CL-I	Department Manager	Tianjin	Logistics

**Table 5-15: Overview of respondent profile for China 3PL providers**

#### CL-A Company

CL-A Company is a joint-equity enterprise supported by An Da Group Company. The primary service for this company focuses on automotive logistics, which mainly provides warehousing and transportation services for Chinese auto manufacturers. This company has over 300 vehicles of its own and around 200,000 square meters of warehousing. In addition, the company also provides tobacco logistics that is a small proportion of current logistics services. The primary purpose of its warehousing is to store different types of cars.

\* All companies are anonymous.

Moreover, the company outsources some parts of its logistics services to second tier logistics agents. Around 40 percent of transportation services are outsourced. The primary clients for the company include Tianjin FAW, Tianjin FAW Toyota Motor Co., Ltd, Guangzhou Toyota Automobile Co., Ltd, Guangzhou Honda Automobile Co., Ltd, and Chery Motor Co. Ltd.

### **CL-B Company**

CL-B Company is an integrated logistics service provider. Its service network has covered most large- and medium- size cities in China. With the golden partnership certification and administration program, professional supply chain solutions, and cutting-edge information technology, the company serves its customers with total supply chain solutions and business process outsourcing service, which covers warehouse management, transportation management, local distribution, and value-added services. Based on a service-oriented architecture (SOA)\*, the company established a customer-oriented adaptive system that is a key enabler to improving its supply chain efficiency, service quality and overall customer satisfaction.

Recently, the company has successfully merged with Hui Tong Logistics Ltd. The aim of the company is to cover door-to-door, customer-to-customer, and business-to-customer services. Its customers are from various industries, such as telecommunications, electronics, automotive, and apparel industries.

### **CL-C Company**

CL-C Company was founded in 1992. It is a class A international logistics agent company approved by the Ministry of Transport of the People's Republic of China. The company currently operates 33 integrated logistics distribution centers, 23 international freight forwarding stations, 7 bonded warehouses, and 114 network hubs. It also offers outstanding services for domestic transportation, international freight forwarding, warehousing, and contract logistics services. In 2007, after acquisition by FedEx of the domestic courier network of the company, the company drafted a development strategy aimed at becoming a world class China-based-integrated-

---

\* SOA is a collection of services. These services communicate with each other. It can include simple data processing, or could include two or more services coordinating the same activity.

logistics solution provider to lead the development of modern logistics practices in China.

As part of this new strategy, it is developing an IT platform that enables the company to offer modern logistics services including customs brokerage, commodity inspection, carrier booking, and EDI with international logistics partners and carriers. In 2008, the company decided to establish a China domestic transportation division and invested RMB 400 million in the first stage to create a China-wide road transportation network. The company is developing standard less-than-loading (LTL) transportation services and is continuing to upgrade its IT systems. It also provides door-to-door value-added services in order to meet all customers' needs.

### **CL-D Company**

CL-D Company, a 50/50 joint-venture company, was established in 1986. The company offers flexible, individual solutions to its clients. It operates national and international full-truck-load and less-than-truck-load services, via road, rail or intermodal transportation. The company has comprehensive customs brokerage services to ensure smooth cross-border shipments.

Moreover, the company is the global leader in the air and ocean freight markets. The company has a strong ability to transport goods to an agreed destination at a customer specific agreed delivery time, and to provide customized solutions for major logistics projects. It already offers a full range of standardized logistics services, and also provides customized industry solutions.

### **CL-E Company**

CL-E Company was established in 1995, and initially started as a warehousing service. Presently, the company has developed to include transportation services, warehousing services, international logistics services, trading agency, and logistics IT solutions. The company is committed to offering professional and customized services to its customers and providing 'one-stop' services from port of shipment to destination.

The objective of CL-E is to become a first class moving company so it establishes a trading division to source and supply packing materials and moving equipment of high quality at competitive prices. The company has tried to provide purchasing

services for international clients who want to get products made in China. The company promises that it provides a door-to-door international delivery service that will be as convenient as any local purchase. The company has joined several international trade associations, such as International Federation of Freight Forwarders Association (FIATA).

### **CL-F Company**

CL-F Company was established in 1998. It is the leading logistics service provider in China as well as being a large state-owned company. The company continues to develop its business, setting up branches in Tianjin, Shandong, Liaoning, Shenzhen, Ningbo, Xiamen and other provinces. Its main business includes general logistics service, logistics agent service for export and import, and marine logistics service. The company plans to offer customized services to all clients. With the slogan of ‘customer centered and market oriented’, the company tries to provide fast and convenient logistics service. The company has implemented purchasing service in marine logistics service.

### **CL-G Company**

CL-G Company is a premium transportation and logistics company in China. The company provides one-stop solutions that integrate multimode transportation (road, airfreight, and railway) by using information technology and service innovations. The company serves more than 200 multinational firms and local leading enterprises. It has 90 operational sites in China and 7 distribution centers in Shanghai, Guangzhou, Wuhan, Chengdu, Xi’an, Beijing, and Shenyang. Its door-to-door freight service covers 800-1000 domestic destinations and its warehouse services include 36 domestic cities. The company has received several international quality accreditations: ISO9001:2008, ISO14001:2004, and GB/T28001-2001 accreditations, and also has the A class certifications of air-freight, rail-freight and road transportation, and obtains the A class of international forwarding agent in China’s main ports.

### **CL-H Company**

CL-H Company, is a wholly owned subsidiary company of T&B Holding Co. Ltd, and is directly controlled under the Management Committee of Tianjin Port Free Trade Zone (TJFTZ). The registered capital of the company has reached RMB 80 million, and the total assets of the Group have reached RMB 1.3 billion. Its main services include trade and trade agency, freight forwarding, customs and inspection broker, storage, transportation, allocation, distribution, logistical financial service, industrial logistics service, logistics real estate service, and logistics property management service. Its core businesses include international logistics, and international trading and international commodities exhibition. The company has attempted to implement purchasing service for building materials when industrial enterprises build new factories in the Tianjin Binhai New Area.

### **CL-I Company**

CL-I Company is the leading logistics management and supply chain solutions company in Asia, and is one of the fastest growing global supply chain management companies in the world. The company provides end-to-end supply chain solutions to leading multinational corporations in the electronics, chemical, and consumer goods industries. The firm has established strong international networks and 50-years of expertise in integrated 3PL services, including transportation and warehousing, and web-based supply chain solutions. There are three primary components of services, namely, manufacturing logistics, finished good distribution logistics, and service and spares return logistics. The firm has operations in Singapore, Malaysia, Indonesia, China, Thailand, Hong Kong, Taiwan, the Philippines, and Australia.

***China- 3PL users (CU)***\*

<b>Code used in text</b>	<b>Official position</b>	<b>Location of Head office in China</b>	<b>Industrial types</b>
CU-A	Department Manager	Beijing	E-commerce
CU-B	Department Manager	Shanghai	Real Estate
CU-C	Department Manager	Hangzhou	E-commerce
CU-D	Department Manager	Tianjin	Retail/wholesale
CU-E	Department Manager	Tianjin	Electronics
CU-F	General Manager	Tianjin	IT
CU-G	Department Manager	Tianjin	Food/Beverage
CU-H	Operations Director	Beijing	E-commerce
CU-I	Department Manager	Tianjin	Electronics

**Table 5-16: Overview of respondent profile for China 3PL users****CU-A Company**

CU-A Company, established in 2007, has created its own brand for online-shopping. With the fast growth of the company, it has been ranked the No. 4 business-to-customer (B2C) electronic commerce company in China. Its primary products include men's and women's clothing, clothing and accessories for children, and home decorations. The company has created its unique organizational culture based on trust and innovation. There are three key reasons for the fast development of the company: 1) advanced technology to integrate clothing manufacture from design to production, 2) excellent customer service, which enhances the reputation of the company, and 3) a brand that signifies a leader in the current modern fashion.

**CU-B Company**

CU-B Company is a provider of modern logistics facilities. It owns, manages, and leases properties in logistics parks, forming an efficient logistics network with properties strategically located in key logistics hubs, industrial zones, and urban distribution centers. By providing flexible solutions of multi-tenant, build-to-suit and sales and leaseback, the company is dedicated to improving the supply chain efficiency for strategic expansion goals of the most dynamic manufactures, retailers, and third party logistics companies. The objective of the company is to provide customers with a strong-network-based platform of high quality logistics facilities in different markets, and establish long-term cooperative relationships with its customers through providing high quality products and services.

---

\* All companies are anonymous.

### **CU-C Company**

CU-C Company, established in 2010, is a fast growing e-commerce company. There are two major investors. One is from a famous TV television organization, and another is from the largest e-commerce company in China. Its products include cosmetics, clothing, fashion accessories, bags, shoes, and feminine foods. Its suppliers include domestic and international suppliers because a certain percentage of products are sourced from international markets. Using the strengths of investors' social resources helps the company flow into business-to-customer (B2C) business. The primary objective of the company is to create a "global fashion dress up museum", so the current strategy of the company primarily promotes the categories of overseas special goods, hairdressing cosmetics, dress shoes, and popular accessories. Its target market focuses on 20 to 30 year old women, and the company is dedicated to providing a 'one-stop' fashion lifestyle solution.

### **CU-D Company**

CU-D Company was founded in 1995 in China. It began its march into the international market in 1997. The company has developed diversified products, such as health food, health care appliances, skincare applications, and household products. The mission of the company is to provide consumers with quality products and opportunities for education, to improve their life quality, and to make the society harmonious.

### **CU-E Company**

CU-E Company was founded in 1994. It is dedicated to developing high quality product in order to meet the requirements of customers. Its main products include digital cameras, video monitors, DVDs, and other electronic appliances. In 1996, the company obtained the certificate of ISO9002 quality management system. In addition, the company has a strong, innovative, talented and effective team. The future strategy of the company will be to continue developing good products to meet customer requirements.

### **CU-F Company**

CU-F Company, founded in 1992, provides information technology support for electronic commerce. Its major service is to provide Enterprise Resource Planning (ERP) functions and integrated electronic business functions. Its service structure includes three major parts: eERP (extended support e-commerce ERP software), ePortal (a customer network marketing and online trade e-commerce portal), eTools (helping its clients achieve inside and outside business collaboration and online trade tools and services). The company focus is to create value for customers since it advocates “take the customer as the center”. The goal of the company is to use the Internet, mobile communications, and other advanced IT technology to help small and medium-sized enterprises reengineer their operational processes in order to enhance their overall competitive competence.

### **CU-G Company**

CU-G Company, established in 1989, has developed into one of the leading beverage companies in China. The main businesses of the company include manufacturing, packaging, and transportation. Its major products are mineral water, juice drinks, and carbonated beverages. Some of the raw materials have been outsourced from suppliers. For instance, sugars are supplied from Guangxi province, and bottling is provided by Zhongfu Company. Currently, around 85% of businesses have outsourced transport to third party logistics providers, whereas, the remainder have developed transport in-house, around 10% to 15% of businesses. One of features for the company is to implement its own quality management system so that it could make sure that the quality of products could meet the required standards.

### **CU-H Company**

CU-H Company, founded in 1999, sells baby products and accessories to millions of Chinese households. Its major products include milk powder, food products, feeding supplies, toys, books, audio-visual and literary products, infant/child underwear and clothing, and gifts. Currently, the company has established two main marketing channels: franchised store and online direct sales. There are more than 3 million registered members, which is China’s biggest business-to-customer (B2C) platform for infant products and accessories. Its franchised stores are located at major business

centers of cities in China, and it provides ‘one-stop shopping experience’ and professional consulting service for the customers. The company sets up its new strategy that aims to build an eco-system for mother and baby products.

### **CU-I Company**

CU-I Company, established in 1992, mainly produces cell phones and mobile communication products. It has two major divisions: mobile terminals and corporate communications and networks. The company has been granted ISO9002 quality assurance system in 2000.

The concept of creating eco-environment has been embedded into the whole production process in the company. The company has invested a lot of money to improve the production equipment in order to reduce unnecessary waste.

#### **5.1.2.2 Reliability and validity for qualitative data**

Kirk and Miller (1986) identify three types of reliability for qualitative research. They are: 1) the degree to which a measurement, given repeatedly, remains the same, 2) the stability of a measurement over time, and 3) the similarity of measurements within a given time period (pp. 41-42). If the researchers deal with a stable measure, then the outcomes can be similar. A high degree of stability reveals a high degree of reliability, which indicates that the results are repeatable (Charles, 1995).

Qualitative validity can be defined as “a good match between researchers’ observations and the theoretical ideas they develop” (Bryman, 2008, p. 390). There are two techniques to demonstrate qualitative validity. One is respondent validation, and another is triangulation.

Respondent validation is a process “whereby a researcher provides the people on whom he or she has conducted research with an account of his or her findings” (Bryman, 2008, p.390). The technique of respondent validation is to ensure that there is a good correspondence between the researcher’s findings and the experiences of research participants. The technique of triangulation is to use more than one method in the research (Bryman, 2008). Triangulation is also referred to as a process of cross-checking findings deriving from both quantitative and qualitative research (Deacon et al., 1998).

Validity and reliability tests were used to evaluate the quality of the research design (Yin, 2003; Voss et al., 2002). Based on Ellram (1996) and Flint et al. (2002), the validity and reliability should be measured throughout the research.

For the reliability of the qualitative research, the colleagues reviewed questions to ensure the consistency before conducting interviews. Using semi-structured questions would make sure that all participants answered the same questions. The researcher reviewed the transcripts and ensured that their answers were repeatable. The validity of the qualitative research was examined using a triangulation technique to check the findings deriving from the quantitative data and inviting the respondents to review the original transcripts.

### **5.1.2.3 Process of data analysis**

All interviews were transcribed into text for analysis. Since all respondents were from China, the researcher also needed to translate the transcripts of the Chinese version into the English version. The English version was then translated back into Chinese and compared with original texts to verify accuracy, and to ensure that both versions were consistent. The transcripts for each interview were sent to the respondent for review to ensure that the content of each transcript was consistent with their original clarifications. No biased information existed.

The computer programme NVivo 9.0 was used to assist with data analysis. In open coding, the researcher read and examined all parts of the interview transcripts to identify the hypothesized relationships, similarities and differences of strengths and weaknesses of offering 3PP service perceived by 3PL providers and users, and compared the overall perception of 3PP service within two groups (3PL providers and users). Then, the researcher categorized the paragraphs into specific theoretical themes by using tree nodes (Bazeley, 2007) (See tables 5-17 and 5-18).

Also, reviewing the themes and original data ensures that the analyses were consistent. In addition, some other relevant information (such as overall perceptions of 3PL providers and users) was categorized into free nodes.

Since each company represents different perceptions on the effect of asset specificity, uncertainty, frequency, and size on 3PP and the impact of 3PP on value-to-client and benefit-to-provider, the researcher compared the companies to determine the similarities and differences and gain the overall perception of associated relationships showed by both parties.

No	Themes	Sub-themes	Code examples
1	Asset specificity	Recruitment of purchasing professionals	Labour markets, Head-hunting company, Job fair
		Additional investments for 3PP service	Logistics technology, Warehousing, Equipment
		Building close relationships with clients	Close relationship, Building good relationship, Reliable relationship
2	Uncertainty	Demand for outsourcing purchasing services	Stable market, Constant for a long-term period, No fluctuation
		Return of value to 3PL providers	No difference among logistics companies, Keep profits
		Change of customer orders	Not be largely changed year by year, Not be fluctuated, Reliable purchasing volume
3	Frequency	Frequency of receiving purchase orders	Weekly orders, Daily orders
		Reduction of fixed cost per transaction	Increase efficiency of using fixed-assets, Reduction costs for fixed assets
		Increase of frequency resulting in having more purchasing power	Economies of scales, More confidence to bid a good price, Aggregate more orders
4	Size	Larger transaction size	Big power, More negotiation power, Influence price domination
		Increase of aggregated orders	More power to influence suppliers, More purchasing volume
5	Value-to -client		Cheap purchasing price, Purchasing cost reduction, Core competence
6	Benefit-to-provider		Attract more customers, Offering 'one-stop' service, Increase of customer loyalty

**Table 5-17: Examples of coding for China 3PL providers**

No	Themes	Sub-themes	Code examples
1	Asset specificity	Recruitment of purchasing professionals	Open job markets, Human resource websites
		Additional investments for 3PP service	Physical infrastructure, Warehouse, Equipment
		Building close relationships	Contractual relationship, Close relationship
2	Uncertainty	Demand for outsourcing purchasing services	Not change for market demand, Stable market
		Achieving company's goals	Cost reduction, Achieving cheap price
		Change of purchase orders	Not change for consumables, Not change for purchasing orders
3	Frequency	Frequency of placing purchase orders	Monthly orders, Quarterly orders
		Monitoring purchasing activities	Not frequently place orders, Low monitoring costs
		Enhancing purchasing power	Not affect the purchasing volume, Not increase purchasing power
4	Size	Larger transaction size	Concerns of the ability of 3PL providers, No historical experience
		Increase of aggregated orders	Concerns of receiving sustained orders, No visibility to customers
5	Value-to-client		Cost savings, Quality check, Core business
6	Benefit-to-provider		Increase of profits, extend to a new business

**Table 5-18: Examples of coding for China 3PL users**

#### **5.1.2.4 Analysis of perceptions for China 3PL providers**

Based on transaction cost theory, the constructs of asset specificity, uncertainty, frequency, and transaction size are divided into two or three questions, examining the perceptions of 3PL providers and users as to positive, negative, or neutral perception.

The questions for asset specificity focus on three perspectives: recruitment of purchasing professionals, additional investments for 3PP service, and building close relationships with clients.

##### *Recruitment of purchasing professionals*

3PL providers positively indicate that the availability of qualified purchasing experts is potentially large and they may be obtained from markets, so 3PL providers do not need to invest additional funds on searching for and developing human resource assets. For example, one of the interviewees stated:

“We could obtain them [purchasing professionals] from the job fairs” (CL-C).

“It is not difficult for us to recruit those purchasing experts since we could get them from labour markets” (CL-A).

But there is one point where the logistics company needs to invest more funds to recruit purchasing professionals. This is evidenced by the following quote from the interviewee:

“Our company has its own department of trading agency. This trading agency has purchasing specialists on agriculture products and construction materials for regional development. For agent service, the company could be able to cover most kinds of products, such as automotive, minerals, construction materials, agriculture products, and mechanical products. We need to invest additional funds to recruit some purchasing professionals for unfamiliar products” (CL-H).

*Additional investments for 3PP service*

3PL providers positively present that they do not need to invest more funds on current infrastructure since offering 3PP service can help them to maximally utilize the capacity of their warehouse and transportation. One of the interviewees stated:

“Presently, our company has established a mature logistics technology system across the national logistics network, which is a big advantage for us. 3PP service would help us maximally use our capacity of warehousing” **(CL-B)**.

“As a national logistics company, we have strong hardware and software so we do not need to invest additional money on upgrading the systems and improving our infrastructure in order to offer 3PP service” **(CL-F)**.

*Building close relationships with clients*

3PL providers positively indicate that they have built reliable relationships with 3PL users, so it is not necessary for 3PL providers to reinvest more effort to maintain close relationships with their clients. As one of the interviewees said:

“Most current clients have established good relationships with [our] company. It is not necessary to reinvest more effort to maintain close relationships with the clients” **(CL-A)**.

“I do not think that investing huge money on maintaining good relationships with them is necessary since we have built reliable relationships between each other” **(CL-G)**.

A few logistics companies show that they may need to invest labour and materials to promote the new service. This evidence can be found from one of the interviewees:

“The company needs to invest labour, materials, and money to promote this new service to potential clients. It is quite important for us to maintain good relationships with current and potential clients” **(CL-I)**.

A logistics company has a neutral perception, and expresses that there are two factors to influence the relationships between both parties:

“There are two primary determinants that affect the relationships between 3PL providers and users: namely, costs and services. Costs could include materials and human costs. Price might not be one of the critical factors to influence the relationships between two parties. I believe that services are the most important factor in the current business environment” (CL-F).

The uncertainty questions emphasize three aspects, namely: demand for outsourcing purchasing services, the return of value to 3PL providers, and change of customer orders.

*Demand for outsourcing purchasing services*

3PL providers positively express that demand for outsourcing purchasing service can be constant for a long-term period. One of the interviewees stated:

“It could be relatively stable since most firms are able to understand the amount of purchasing. They could place similar orders based on the volume of production and demand. I do not believe that demand for SMEs might have a significant change for a short- and medium- period” (CL-I).

A few logistics providers have neutral perceptions since they are lacking historical data to forecast the future demand for purchasing. For example, one of the interviewees said:

“It is not simple to say whether the demand for outsourcing purchasing service would be changed significantly. The current situation is that the company could not have any historical data to forecast the future demand for purchasing. Probably, the demand might be changed swiftly at the initial stage. It is more difficult to accurately forecast the demand for purchasing. However, with this service developing, most 3PL users could have clear ideas about the annual

demand for their purchasing, so it is easy for them to place more accurate orders to 3PL providers” (CL-D).

*Return of value to 3PL providers*

3PL providers positively express that they are able to cover most ranges of products for 3PP service due to having strong financial strengths and national logistics networks. Focusing on different industries or markets, for 3PP service, will not negatively impact the return of value to 3PL providers. One of the interviewees stated:

“I believe that our company is able to cover most ranges of products for outsourcing purchasing, for which those small- and medium- sized 3PL providers might not have sufficient financial strengths and national networks, to affect return of value to our company” (CL-B).

“Some 3PL providers might develop from trading business so they might have more resources for a particular industry. Therefore, the major purchasing services for those logistics companies could be unique, based on characteristics of products and regional features. Perhaps, some logistics companies could have past experience in one country. Take Japan as an example. They might not have more experience of North America and Europe. It is highly likely for those companies to offer purchasing service in Japan rather than other areas when this business just starts. Probably, they might consider extending their markets for an increase of international market share” (CL-E).

Some logistics providers express that they cannot say whether they are able to get more return of value since there are other factors to influence the values returned to the logistics providers. One of the interviewees said:

“Reputation of the company and quality of service become major variables to influence values returned to the logistics company” (CL-F).

Change of customer orders

Normally, the sales of users may not be significantly changed since 3PL providers positively indicate that their clients can understand the types and volumes of outsourced purchasing. The following is an example of the interviewees' opinion.

“I think that offering purchasing services is very stable for a long period...most clients could understand the percentage of outsourced purchasing, so the demand for purchasing service will not fluctuate significantly. We do believe that we are able to provide this service for a long period if we decide to offer this new service” (CL-D).

“Based on my personal experience, most firms could have constant market demand so their orders might not be changed dramatically” (CL-G).

A few logistics providers have neutral perception since the market demand totally depends on 3PL users. One of the interviewees stated:

“It depends on the demand market of 3PL users. If the demand of their markets might significantly increase, they might be able to place more purchasing orders to 3PL providers and vice versa” (CL-F).

However, seldom do logistics providers express that the changed annual demand is significantly changed since their customers know the peak and off-peak seasonal demand.

“Customer's orders really depend on the demand of their markets. When the demand of their products is very large, they might change their orders frequently... for logistics company, the change of customers' orders positively influences the offering of purchasing service” (CL-I).

The frequency questions focus on three perspectives: frequency of receiving purchase orders, reduction of fixed cost per transaction, and increase of frequency resulting in having more purchasing power.

Frequency of receiving purchase orders

3PL providers positively express that they want to receive monthly or weekly orders since it is easy to control the forecast. One of the interviewees stated:

“Our company may have three types of schedules (quarterly, monthly, and weekly) for purchase orders when we may provide third party purchase service in future. Actually, there are some differences between predicted and actual data, so we expected to receive weekly orders in order to increase forecasting accuracy” (CL-A).

“Based on the current operational processes, we expected to receive purchasing orders weekly” (CL-F).

However, a few logistics companies have a neutral perception and state that the order frequency depends on the characteristics of products. It is mentioned by one of the interviewees:

“It depends on characteristics of products” (CL-C).

Reduction of fixed cost per transaction

Consolidating small orders from 3PL users can help 3PL providers reduce fixed cost per transaction. One of the interviewees stated:

“The more they place orders frequently, the less fixed cost per transaction for our [logistics] company” (CL-H).

“I think that most our customers have high frequency of purchasing orders due to limited order quantity and negotiation power. With an increase of their demand for outsourcing purchasing, the order frequency could increase dramatically, so the fixed cost per transaction could be decreased” (CL-D).

A few logistics providers have a neutral perception, and state that other variables also influence the order frequency, such as order fulfilled rate. One of the interviewees said:

“It needs to consider an indicator of order fulfilled rate. This is quite important for 3PL providers. To reduce fixed cost per transaction requires having large numbers of completed orders. Otherwise, it could be kind of wasteful. The higher order fulfilled rate, the less fixed costs incurred” (CL-G).

*Increase of frequency resulting in having more purchasing power*

3PL providers positively point out that they can have more purchasing volumes in order to gain more bargaining power through increasing order frequency. The evidence can be found from one of the interviewees:

“Yes, it is more beneficial for us since we could be able to aggregate those small orders into a big order [high volume]. We could have more confidence to bid a good price if the purchasing volume is no problem [stable]. We are also able to increase our flexibility for bidding” (CL-B).

A few logistics companies have a neutral perception and indicate that other variables can influence order frequency and profitability.

“Two variables could determine profitability: namely efficiency of capital and cost of capital. For instance, we could order a product one at a time but a customer might need two products so the efficiency of capital might not be fully utilized although the cost of capital could be maintained at a minimum level. It always needs to balance those two factors in order to get reasonable price for our clients” (CL-C).

One logistics company reveals that the high frequency cannot increase the purchasing power of logistics companies. The interviewee stated:

“The high frequency might not directly indicate that you could have more purchasing volume from your clients. It might not help 3PL providers to get reasonable price, and transaction cost could be as high as usual” (CL-G).

The questions for transaction size focus on two aspects: larger transaction size and increase of aggregate orders.

Larger transaction size

Larger transaction size enables 3PL providers to gain more negotiation power and bid cheap purchasing price, and also can influence the suppliers' behaviors. One of the interviewees stated:

“Larger transaction size makes our company have large negotiation power to minimize the purchasing costs. We have more forces to influence supplier's behaviors” (CL-H).

“Obtaining large transaction size enables our company to have more power to influence the purchasing price” (CL-D).

One interviewee has a neutral perception, and expresses that there are two conditions to influence the transaction size: scale of order and order frequency. The interviewee said:

“There are two conditions to answer this question. One is the scale of order, and another is order frequency. When the two factors increase, the purchasing costs could reduce. A logistics firm not only has larger transaction size, but also increases the order frequency in order to gather more purchasing power in order to minimize the purchasing costs” (CL-I).

Increase of aggregate orders

3PL providers positively believe that aggregated orders enable them to be more flexible to respond to uncertain market demand, with increased bargaining power. One of the interviewees stated:

“We have ability to aggregate small orders together, so it is certain that we have more bargaining power to influence the purchasing price, and have more probabilities to bid cheaper price” (CL-C).

“Most SMEs could place small orders at the initial stage of this new service due to uncertain market demand. To consolidate those small orders together gives our company increase negotiation power to reduce purchasing price. When the market becomes mature, SMEs could understand what types of products should be outsourced to 3PL providers. They might increase their order quantity for each batch” (CL-I).

One logistics company has a neutral perception, and states that the transaction size depends on ability and time to consolidate similar orders. One interviewee said:

“It would depend on ability and time to consolidate those similar orders. A mature logistics company should have stable cash flow to run this value-added service. Ability to integrate those small and similar orders quickly would be a significant advantage in bargaining with suppliers” (CL-H).

#### Value-to-client and benefit-to-provider

For the questions of value-to-client and benefit-to-provider, 3PL providers positively indicate that 3PL users are able to receive the benefits of purchasing cost reduction, and mitigating purchasing risk. Also, 3PL providers can increase their revenue through offering 3PP service, and maintain their competitive advantages. One of the interviewees stated:

“Obviously, the 3PL users could have ability to receive cheaper purchasing price although they place a small portion of orders. They do not worry about the risks of purchasing, warehousing and transportation since the whole ownerships of operations and logistics processes are controlled by 3PL providers.” (CL-H).

“The revenue of 3PL providers could increase through introducing the combination of purchasing and transportation services. The model of ‘purchasing + transportation’ could make our clients stay with us. They will use our logistics service through receiving benefits from 3PP services” (CL-C).

#### **5.1.2.5 Findings for China 3PL providers**

Firstly, 89\* percent of respondents positively indicated that it was not difficult for them to recruit purchasing experts because they could get them from labour markets, head-hunting companies, or human resource pools. Also, they believed that such investment for human resources would not be large. For additional investments, the respondents positively expressed that they did not need to invest more funds on the current infrastructure. Offering 3PP service helped them maximally use their capacity of warehouse. 67 percent of respondents positively pointed out that they had established good relationships with clients because they continuously offered reliable and high quality services to them. 22 percent of respondents indicated that they needed some investments on improving the relationships with clients. 11 percent had neutral perception (e.g. other factors influence the relationship between two parties.). This suggests that most 3PL providers do not believe that they need to invest in large non-deployable assets for 3PP service, which strongly disconfirms that larger asset specificity results in not offering 3PP service by 3PL providers, supporting the result in the quantitative study.

Secondly, 67 percent of respondents positively believed that the demand of outsourcing purchasing service could be more stable for a long-term period since most firms were able to understand the amount of purchasing. They could place similar orders based on the volume of production and demand. 33 percent had neutral perception (e.g. it is not simple to say whether the demand for outsourcing purchasing service would be changed significantly.). For the return of value to 3PL providers, more than half of respondents positively held a view that offering 3PP service by 3PL providers needed to have strong financial support and worldwide logistics networks. For those small- and medium-sized logistics companies, it could be difficult to enter into this market, so those logistics firms with strong financial strengths and worldwide networks could maintain a sustained competitive position and sustainably get the expected return of value. 56 percent of respondents positively indicated that most clients could understand the overall amount of purchasing products, so their orders for purchasing service would not fluctuate significantly. 22 percent had neutral perceptions (e.g. it is hard to say whether customer's orders vary significantly since we do not have past experience of variation of this market). 22 percent of respondents

---

\* All numbers are rounded.

expressed that the customer orders could vary significantly. This demonstrates that most 3PL providers think that the uncertainty of market demand was low, they were capable of managing the return of value, and change of customer orders would not be significant, which strongly confirms that low uncertainty leads to offering 3PP service by 3PL providers, supporting the finding in the quantitative study.

Thirdly, more than half of respondents positively expected that the 3PL users would be able to place orders daily or weekly since it would be easy to control and forecast orders. 67 percent of respondents positively believed that consolidating each small order from the customers reduced the fixed costs per transaction since it increases the efficiency of using fixed-assets, and positively pointed out that an increase of frequency made 3PL providers aggregate more orders, and have more purchasing power to obtain a cheap price. 33 percent of respondents had neutral perceptions of reduction of fixed cost per transaction (e.g. it needs to consider an indicator of order fulfilled rate...the higher order fulfilled rate, the less fixed costs incurred), and 22 percent of respondents specified that other variables could determine the degree of purchasing power rather than only relying on the increase of frequency (e.g. efficiency of capital). 11 percent of respondents showed that the high frequency might not directly relate to the level of purchasing power. This suggests that the majority of respondents positively state that they expect to receive daily or weekly purchasing orders. 3PL users with limited purchasing quantity and bargaining power would frequently place purchase orders to them, and a high frequency of placing orders can achieve the economies of scale from gathering more similar products to exert group purchasing power, which strongly confirms that the high frequency of using purchasing service supports offering 3PP service by 3PL providers, supporting the finding in the quantitative study.

Fourthly, 89 percent of respondents positively indicated that larger transaction size allowed 3PL providers to have increased to negotiate a cheap price and reduce purchasing costs. 11 percent of respondents had neutral perceptions (e.g. having other variables to determine the transaction size). 89 percent of respondents positively believed that an aggregated order could increase the purchasing power and yield more opportunities to get a cheap price. 11 percent of respondents had neutral perceptions (e.g. depending on time and ability to integrate purchasing orders). This reveals that,

from the perspective of 3PL providers, most of them have confidence that the larger transaction size can allow them to bid a cheaper price on behalf of 3PL users, and the aggregated purchase orders would help them dominate the whole negotiation process, which strongly confirms that the larger size of the transaction leads to having more bargaining power by 3PL providers, supporting the finding in the quantitative study.

For the questions of value-to-client and benefit-to-provider, all respondents positively indicated that offering 3PP service helped the customers reduce purchasing costs and mitigate purchasing risk. Offering 3PP services allowed 3PL providers to keep customer's loyalty and increase profits. This suggests that 3PL providers believe that offering 3PP service would generate mutual benefits for both parties, which positively confirmed that 3PP service is strongly associated with bringing more value to 3PL users and receiving more benefits for 3PL providers, supporting the finding in the quantitative study.

#### **5.1.2.6 Analysis of perceptions for China 3PL users**

The question of asset specificity emphasizes three perspectives: recruitment of purchasing professionals perceived by 3PL users, additional investments for 3PP service perceived by 3PL users, and building close relationships perceived by 3PL users.

##### *Recruitment of purchasing professionals*

3PL users positively indicate that recruiting purchasing professionals is not a big issue for 3PL providers since they can get the purchasing experts from job search websites or outsourced to professional human resource agents based on the job specification. One of the interviewees stated:

“Many experienced purchasers for 3PL providers could be obtained through job search websites. The providers are able to put their requirements on the websites, and 3PL providers could get large amounts of candidate applications. Then, they select their best candidates. I think that the 3PL providers would not spend a lot of money on human assets” (CU-F).

“I do not think that recruiting professional purchasing experts is a big issue for 3PL providers. In China, there are a lot of talented people who are able to meet the logistics providers’ requirements. Most purchasing experts could be obtained from professional headhunting companies. They could help the logistics firms choose most suitable candidates.” (CU-H).

A few 3PL users express that 3PL providers need to have some investment in recruiting purchasing professionals since human assets are critical for 3PL providers. One of the interviewees said:

“It is required for 3PL providers to have more purchasing professionals since those professionals are critical for 3PL providers. Human resource is quite an important factor to determine whether this new service could be successfully implemented. Thus, 3PL providers need more investments in this” (CU-C).

*Additional investments for 3PP service*

3PL users positively express that 3PL providers do not need to invest large funds on the current logistics infrastructure. This evidence can be found from one of the interviewees:

“The current basic infrastructure of 3PL providers would be sufficient to offer 3PP service, there is no need for them to put additional investments on this...I expect that 3PL providers could achieve the purchasing function in the current system... I do not think that they need to have more costs on such improvement” (CU-B).

“They do not need to have additional investments on the physical infrastructures. They have got advanced logistics technology, modern warehousing systems, and good quality of transportation fleets. For instance, we share a part of inventory information to 3PL providers. They could replenish our inventories when the reorder quantity is triggered. Now, we have compatible systems with 3PL providers” (CU-I).

A 3PL user believes that 3PL providers need to upgrade their logistics systems, which can include the purchasing function. Also, based on the characteristics of products, such as fresh products, 3PL providers may need to have special transports for delivery.

“I think that 3PL providers need to upgrade their logistics systems since the purchasing function cannot be fulfilled in the current systems. 3PL providers also need to establish additional warehousing that could be located close to the manufacturer. It would save transportation costs from the manufacturer to the current warehouses. For other specific products, like fresh products, they should provide special transports for delivery. Thus, they may consider additional investments on the current hardware” (CU-D).

#### *Building close relationships*

The contractual relationship between two parties can meet the 3PL users' requirements, and such relationship is stable. Close relationship with 3PL providers would give more confidence for 3PL users to use 3PP service. One of the interviewees said:

“...have a contractual relationship with 3PL providers. Most outsourced products to them would not be critical components for our business, so I do not think that they are required to put more capital to keep close relationships with us”(CU-B).

“I think that the current close relationships with 3PL providers would give some confidence to try to use this service” (CU-E).

A few 3PL users indicate that 3PL providers need to put more effort into having close relationships with their customers. One of the interviewees stated:

“I think that 3PL provider needs to put more effort in having close relationships with 3PL users, such as a strategic partnership. The more having close relationships, the high possibility 3PL users could place more purchasing orders to 3PL providers” (CU-C).

The questions for uncertainty focus on three aspects, namely: demand for outsourcing purchasing service perceived by 3PL users, achieving company's goals, and change of purchase orders.

*Demand for outsourcing purchasing service*

The demand for 3PP service would not be likely to change significantly over time since 3PL users may not easily change their purchasing plan, and since they understand the product types and volumes they would like to outsource. One of the interviewees said:

“It [demand for purchasing service] might not have significant change. Our company could not easily change its own purchasing plan” (CU-C).

“The main types of products could not change significantly since we know what volumes we are going to outsource” (CU-F).

A few 3PL users express that the demand for outsourcing purchasing service can be changed since the purchasing orders increase when the market for 3PP service becomes mature. One of the interviewees pointed out:

“The demand might be changed. At the initial stage, we might outsource a small part of our purchasing business to a 3PL provider because we want to test a market and see the real benefits from this service. If this market is mature, we might consider increasing our purchasing quantities. In the near future, the initial stage would be a temporary stage” (CU-G).

*Achieving company's goals*

3PL users positively show that using 3PP services could help them achieve the goals of cost reduction and minimize operational costs. This evidence can be found from one of the interviewees:

“3PL providers help us achieve initial targets such as cost reduction” (CU-C).

“...the logistics company helps us reduce operational costs” (CU-D).

*Change of purchase orders*

3PL users positively indicate that the size of orders may not be changed since they follow their purchasing plans. One of the interviewees said:

“It is not possible to significantly change the order quantity since our purchasing plan has been created. We have to rely on the purchasing plan to place the orders” (CU-C).

“...the purchase order cannot be changed” (CU-B).

A few 3PL users have neutral perceptions, and express that a change of purchase orders depends on the market demand. One of the interviewees stated:

“It totally depends on the market demand. If the demand is high, we need increase purchase orders. Otherwise, it could be low if the market demand is weakened” (CU-A).

One 3PL user indicates that the purchase orders are changed due to the bullwhip effect.

“Our purchasing orders could be changed significantly due to the bullwhip effect. Sometimes, the responsiveness of the supply chain might not be effective, so we could decrease our purchase orders. If the market demand for our products increases, it is certain for us to place more orders to our 3PL provider” (CU-I).

There are three questions for frequency: frequency of placing purchase orders, monitoring purchasing activities, and enhancing purchasing power by an increase of frequency.

*Frequency of placing purchase orders*

3PL users positively express that monthly orders are more practical since 3PL users may need a certain level of inventory to meet uncertain demand at the beginning stage and are more flexible to respond to market change. One of the interviewee stated:

“Practically, we could need a certain level of inventory for meeting uncertain demand at the beginning stage. Monthly orders would be feasible and practical” (CU-G).

“Due to lower forecasting accuracy, we might prefer to place monthly orders. It is better for us to control the level of inventory with minimum costs” (CU-I).

A few 3PL users have neutral perceptions, and state that the order frequency depends on their financial strength.

“It depends on how strong is a company’s financial strength. If a company has sufficient cash flows, it may not order the products frequently. However, if its cash flow may be strained, it is highly likely for the company to increase purchasing frequency since the company may place small orders each time” (CU-C).

#### Monitoring purchasing activities

3PL users prefer to place monthly or quarterly orders, so the associated monitoring costs are not high. Also, outsourced non-critical products to 3PL providers do not require them to spend more time and costs to monitor the purchasing activities. One of the interviewees said:

“Consumable products are non-critical products for us. We might not spend more time on this since our target is to reduce purchasing costs” (CU-E).

“... the frequency of placing orders is based on every month” (CU-F).

#### Enhancing purchasing power by an increase of frequency

The level of frequency cannot affect the purchasing volume since the purchasing power of 3PL providers should be related to the size of orders. This evidence can be found from one of the interviewees.

“The level of frequency could not affect the purchasing volume unless 3PL provider has sufficient ability to aggregate orders from 3PL users” (CU-A).

“Order frequency is related to how many times we could place orders rather than order size” (CU-E).

A few 3PL users indicate that 3PL providers, as a purchasing agent, are able to increase purchasing volumes in order to achieve economies of scale. One of interviewees said:

“A 3PL provider could be a purchasing agent for many users. It is quite possible for the provider to increase purchasing volumes in order to achieve the economies of scale” (CU-D).

A 3PL user has a neutral perception; and the leveraging power should depend on the consolidation ability of 3PL providers. An interviewee stated:

“It could depend on the ability of consolidating orders by 3PL provider. If it could quickly consolidate the orders, it is highly possible to have more power to reduce the price. However, if 3PL users could not receive more profits based on high frequency of placing orders and the 3PL provider lacks sufficient ability to aggregate the orders, it is difficult to get a best purchasing price” (CU-B).

The two questions for transaction size relate to large transaction size perceived and increase of aggregated orders perceived by 3PL users.

#### Large transaction size

The size of 3PL user’s order should depend on the stability of 3PL providers’ business and the size of their business. Actually, most logistics providers do not offer this service at present and do not have historical experience of offering this service, so 3PL users do not increase the size of orders at the beginning stage. One of the interviewees stated:

“The size of our orders should depend on the stability of provider’s business, and the size of its business. The sustained orders received by 3PL providers

are major concerns for us. It is difficult for our company to grow steadily without placing sustained orders” (CU-A).

“Our logistics company does not have past experience of providing 3PP service, so we may not increase our size of orders at the beginning stage” (CU-B).

A few 3PL users express that large transaction size can increase the confidence of 3PL providers to get cheap price, and consolidate small orders based on the advantages of national logistics networks. One of the interviewees said:

“Large transactions can increase the confidence of 3PL providers to bid a cheap purchasing price on behalf of their users. Based on their national networks, I believe that 3PL providers could consolidate small orders from 3PL users” (CU-C).

#### Increase of aggregated orders

3PL users strongly indicate that they have a concern regarding the ability of 3PL providers to get large sustained similar orders from other customers. One of the interviewees stated:

“We still have a concern whether 3PL provider could receive large sustained orders from their different users” (CU-A).

“It is critical whether 3PL providers could use the advantages of networking to consolidate those orders together; using large purchasing volumes could influence the purchasing price during the negotiation process. I cannot see this ability at the current stage” (CU-E).

A 3PL user has a neutral perception, and points out that the purchasing power of 3PL providers depends on market demand for a particular product. The interviewee said:

“It would depend on market demand for purchasing particular products. Our logistics providers need to show their ability whether they are able to

consolidate these particular products so that they can get more leveraging power to dominate price during the negotiation process” (CU-I).

A few 3PL users indicate that large transactions can increase the confidence of 3PL providers, so aggregating more purchasing orders together helps 3PL providers have more advantages to negotiate the purchasing price on behalf of 3PL users. One of the interviewees stated:

“I believe that 3PL providers could receive and aggregate more purchasing orders together, so they could control the negotiation process based on the large purchasing volume” (CU-D).

#### *Value-to-client and benefit-to-provider*

Regarding questions for value-to-client and benefit-to-provider, 3PL users believe that using 3PP service can help them improve their abilities of managing their supply chains, improving their core businesses, and reducing purchasing costs. Also, they express that 3PL providers would receive more benefits through offering 3PP service, such as having more close relationships with 3PL users, expanding their businesses, and increasing their profits. One of the interviewees stated:

“Improve the ability of managing our supply chains since we might become a network member if 3PL providers could purchase our products for their clients” (CU-B).

“Our logistics providers are able to expand their current business, build up deep trust relationships with customers, increase level of attractiveness to customers, and enhance the brand of the company, and have sustained growth ability” (CU-G).

#### **5.1.2.7 Findings for China 3PL users**

Firstly, 67\* percent of respondents positively expressed that 3PL providers would not spend a lot of money on human assets because many experienced purchasers can be

---

\* All numbers are rounded.

obtained on job-search websites or from professional human resource agents. 33 percent of respondents indicated that 3PL providers need to invest in recruiting professional purchasing experts. 89 percent of respondents positively indicated that 3PL providers did not need to invest large funds in the current logistics infrastructure. Although few respondents expect that 3PL providers have added the purchasing function in the current logistics systems, they do not think that 3PL providers need large investments in upgrading systems since adding additional purchasing function to the current logistics systems would not cost too much. 78 percent of respondents positively showed that the relationships with 3PL providers were quite stable, and 3PL providers ensured that the quality of products met their standards and were able to fulfill their orders. 22 percent of respondents pointed out that 3PL providers needed to put more effort into having close relationships with 3PL users. This suggests that 3PL users do not believe that 3PL providers need to invest significantly more funds in recruiting purchasing talents, or the current logistics infrastructure, or building close relationships. This strongly disconfirms that the usage of 3PP service is positively related to the high investments by 3PL providers, supporting the finding in the quantitative study.

Secondly, 67 percent of respondents positively indicated that the demand for outsourcing purchasing service would not change significantly since most companies could not easily change their own purchasing plan and cycle time for sales which affected their core business. 33 percent of respondents expressed that the demand of purchase orders might change. All respondents positively showed that using 3PP service could help them achieve their business goals, such as cost reduction and minimizing operational costs. 67 percent of respondents positively expressed that the size of purchase orders would not change since 3PL users rely on their purchasing plans to place an order. 22 percent of respondents had a neutral perception (e.g. it totally depends on the market demand.). 11 percent of respondents thought that the purchasing orders could be significantly changed. This suggests that 3PL users believe that the overall market demand for 3PP service would be stable, and believe that they could achieve their business goals through using 3PP service. They indicate that purchase orders are not significantly changed, which strongly confirms that low uncertainty leads to use of 3PP service, supporting the finding in the quantitative study.

Thirdly, most 3PL users positively expressed that monthly orders could be practical because they need a certain inventory level to meet their uncertain market demand, and the associated costs of monitoring purchasing activities would not be high as the frequency of placing orders was based on monthly. Also, all respondents point out that most outsourced products were non-critical so they would not spend much more money on monitoring the whole purchasing process. 67 percent of respondents positively pointed out that an increase of frequency would not increase the purchasing power of 3PL providers since the order frequency was to determine how many times they would place orders. 11 percent of respondents had neutral perceptions (e.g. depending on the capability of consolidating orders). 22 percent of respondents signified that an increase of frequency could result in the economies of scale. This suggests that most respondents positively show that monthly orders would be practical, express that they do not spend more money on monitoring the progress of purchasing activities for non-critical items, and indicate that the increase of frequency is not related to the negotiation power, which strongly disconfirms that the high frequency results in using 3PP service by 3PL users, supporting the finding in the quantitative study.

The two questions for transaction size include large transaction size perceived and increase of aggregated orders perceived by 3PL users. 78 percent of respondents positively indicated that 3PL providers might not have historical experience of offering this service, which was a concern about 3PL provider's capability of obtaining larger transaction size in order to increase its bargaining power. 22 percent of respondents showed that large transactions could increase the confidence of 3PL providers to get cheap purchasing price. 67 percent of respondents positively had a concern of whether 3PL providers could use the advantages of networks to consolidate those orders together. 11 percent of respondents had a neutral perception (e.g. depending on market demand for a particular product). 22 percent of respondents believed that 3PL providers could receive and aggregate more purchasing orders. This suggests that although, theoretically, the larger transaction size would give more bargaining power to 3PL providers, most respondents would have doubts of the abilities of aggregation and consolidation of 3PL providers, which strongly disconfirms that the capability of creating larger transaction size by 3PL providers

leads to use of 3PP service by 3PL users, supporting the finding in the quantitative study.

Regarding questions for value-to-client and benefit-to-provider, all respondents positively believed that they would receive cost savings, be able to focus on core business, and have assurance of quality checks. 3PL providers could extend into a new business and increase capacity usage of transportation and warehousing through offering this service. This suggests that 3PL users have confidence that using 3PP service could achieve the objective of cost reduction and increase utilization of capacity of 3PL providers, which strongly confirms that 3PP service is positively related to receiving value for 3PL clients, and is strongly related to bringing more benefits to 3PL providers, supporting the findings in the quantitative study.

## **5.2 Data analysis of data collected in New Zealand – 3PL providers and users**

### **5.2.1 Quantitative data analysis – Questionnaires**

The procedure for dealing with the New Zealand data is the same as for the analysis of the Chinese data. The researcher examines the non-response bias and common-method variance suggested by Armstrong and Overton (1977) and Podsakoff and Organ (1986). The non-response bias analysis involved *t*-tests which revealed no statistically significant differences between two groups in terms of the means for items (years, firm size, and annual gross sales) in the response of early and late received surveys (see Table 5-19 and 5-20).

For common method variance, the Harman one-factor test was used (Podsakoff and Organ, 1986). All items making up the constructs were entered into a principal components factor analysis with VARIMAX rotation (Gotzamani et al., 2010). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for 3PL providers was 0.798 and for 3PL users was 0.783; both samples were higher than 0.5 (Kaiser, 1970). Bartlett's Test of Sphericity for both samples was significant ( $p < 0.001$ ), suggesting the suitability for factor analysis. In the data of 3PL providers, 7 factors were extracted accounting for 65.8 percent of the variance; factor one accounted for 14.5 percent of the variance. In the data of 3PL users, the results showed that 7 factors were responsible for 71.84 percent of the variance; the contribution of the first factor was 16.1 percent; the conclusion is that common-method variance is not a problem with the two types of data (see Tables 5-21 and 5-22).

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
NLYear	Equal variances assumed	0.191	0.665	-0.543	32	<b>0.591</b>	-0.176	0.325	-0.838	0.485
	Equal variances not assumed			-0.543	30.289	<b>0.591</b>	-0.176	0.325	-0.84	0.487
NLSize	Equal variances assumed	0.208	0.651	-0.983	32	<b>0.333</b>	-0.471	0.479	-1.446	0.505
	Equal variances not assumed			-0.983	31.984	<b>0.333</b>	-0.471	0.479	-1.446	0.505
NLSales	Equal variances assumed	0.209	0.651	0.212	32	<b>0.833</b>	0.059	0.277	-0.506	0.624
	Equal variances not assumed			0.212	31.935	<b>0.833</b>	0.059	0.277	-0.506	0.624

**Table 5-19: Non-response bias for the sample of New Zealand 3PL providers**

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
CUYear	Equal variances assumed	0.529	0.472	1.213	30	<b>0.235</b>	0.625	0.515	-0.428	1.678
	Equal variances not assumed			1.213	29.506	<b>0.235</b>	0.625	0.515	-0.428	1.678
CUSize	Equal variances assumed	0.169	0.684	-0.275	30	<b>0.786</b>	-0.063	0.228	-0.527	0.402
	Equal variances not assumed			-0.275	29.534	<b>0.786</b>	-0.063	0.228	-0.528	0.403
CUSales	Equal variances assumed	0.64	0.43	0.674	30	<b>0.505</b>	0.25	0.371	-0.507	1.007
	Equal variances not assumed			0.674	28.708	<b>0.506</b>	0.25	0.371	-0.509	1.009

**Table 5-20: Non-response bias for the sample of New Zealand 3PL users**

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.734	26.67	26.67	7.734	26.67	26.67	4.204	14.496	14.496
2	3.086	10.642	37.313	3.086	10.642	37.313	3.263	11.252	25.748
3	2.255	7.774	45.087	2.255	7.774	45.087	2.71	9.345	35.093
4	1.958	6.753	51.84	1.958	6.753	51.84	2.471	8.52	43.613
5	1.493	5.148	56.988	1.493	5.148	56.988	2.339	8.064	51.677
6	1.398	4.821	61.809	1.398	4.821	61.809	2.286	7.882	59.559
7	1.157	3.989	65.798	1.157	3.989	65.798	1.809	6.239	65.798
8	0.908	3.133	68.93						
9	0.842	2.903	71.833						
10	0.806	2.781	74.614						
11	0.682	2.35	76.964						
12	0.665	2.291	79.256						
13	0.624	2.152	81.408						
14	0.584	2.014	83.421						
15	0.522	1.801	85.222						
16	0.511	1.762	86.985						
17	0.467	1.609	88.593						
18	0.411	1.418	90.011						
19	0.374	1.29	91.301						
20	0.356	1.227	92.528						
21	0.341	1.175	93.703						
22	0.299	1.03	94.733						
23	0.288	0.995	95.728						
24	0.266	0.916	96.644						
25	0.249	0.858	97.502						
26	0.216	0.746	98.248						
27	0.211	0.727	98.975						
28	0.159	0.548	99.523						
29	0.138	0.477	100						

Extraction Method: Principal Component Analysis.

**Table 5-21: Common-method variance for the sample of New Zealand 3PL providers**

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.26	20.867	20.867	6.26	20.867	20.867	4.828	16.092	16.092
2	4.178	13.926	34.794	4.178	13.926	34.794	4.026	13.419	29.511
3	3.548	11.828	46.621	3.548	11.828	46.621	3.125	10.417	39.928
4	2.223	7.41	54.031	2.223	7.41	54.031	2.743	9.144	49.072
5	2.07	6.901	60.932	2.07	6.901	60.932	2.353	7.842	56.914
6	1.8	6.001	66.933	1.8	6.001	66.933	2.333	7.777	64.691
7	1.471	4.904	71.836	1.471	4.904	71.836	2.144	7.145	71.836
8	0.899	2.995	74.831						
9	0.725	2.416	77.248						
10	0.677	2.258	79.505						
11	0.642	2.14	81.645						
12	0.557	1.857	83.502						
13	0.499	1.664	85.166						
14	0.451	1.502	86.669						
15	0.419	1.397	88.065						
16	0.389	1.297	89.362						
17	0.36	1.201	90.563						
18	0.359	1.195	91.758						
19	0.332	1.105	92.864						
20	0.301	1.002	93.866						
21	0.293	0.976	94.842						
22	0.259	0.863	95.705						
23	0.236	0.785	96.491						
24	0.211	0.703	97.194						
25	0.186	0.618	97.812						
26	0.183	0.61	98.422						
27	0.164	0.546	98.968						
28	0.113	0.376	99.344						
29	0.101	0.338	99.682						
30	0.095	0.318	100						

Extraction Method: Principal Component Analysis.

**Table 5-22: Common-method variance for the sample of New Zealand 3PL users**

#### **5.2.1.1 Overview of respondent profiles – NZ 3PL providers and users**

Table 5-23 shows the demographics of the respondents. In the data of 3PL providers, all informants are from the logistics industry. For the survey of 3PL users, 14.7 percent of the informants are from the industry of food, beverage and wine. 12.9 percent of informants are from the industry of public administration and health, and 9.8 percent from the industries of retail/ wholesale and construction.

The majority of the relationships have been maintained for 2-15 years (65.6 percent in the 3PL provider sample and 57.7 percent in the 3PL user sample). 30.7 percent of 3PL providers have partnered with their customers for more than 15 years, and 22.1 percent of 3PL users indicate that they have used 3PL services for more than 15 years. Around 6 percent employed less than 50 full-time employees in the 3PL provider sample, and 37.4 percent of 3PL users indicate that they have less than 50 full time employees. 87.9 percent of 3PL providers indicated that the annual gross sales are more than NZ\$10 million, and 23.9 percent of 3PL users indicated their annual gross revenues are less than NZ\$5 million.

Table 5-24 illustrates the importance of outsourcing services perceived by 3PL providers and users. Both parties state that transportation and warehousing services are the most important outsourcing services. Also, more than half of informants indicate that purchasing can be rated as an important service. In the sample of 3PL providers, the services of product returns and order management are equally rated the least important services. In the sample of 3PL users, the cross-docking service is perceived as the least important outsourcing service.

## Data analysis

Firm characteristics	Firm Group	Percentage		Percentage	
		(3PL providers)	Total percent	(3PL users)	Total percent
Industry	Logistics	100	50.46	-	-
	Retail/Wholesale	-	-	9.8	4.86
	Agriculture	-	-	11	5.47
	Construction	-	-	9.8	4.86
	Mechanical manufacturing	-	-	7.4	3.65
	Petrochemical	-	-	3.7	1.82
	Electrical/Engineering	-	-	6.1	3.04
	Electronics	-	-	6.7	3.34
	Food/Beverage/Wine	-	-	14.7	7.29
	Textile and Apparel	-	-	5.5	2.74
	Public admin/Health	-	-	12.9	6.38
	Education	-	-	5.5	2.74
Other	-	-	6.7	3.34	
Age of firms partnered with 3PL providers or customers	Less than or equal to 2 years	3.6	1.82	20.2	10.03
	More than 2 years but less than or equal	7.2	3.65	16	7.9
	More than 5 years, but less than or	22.9	11.55	23.3	11.55
	More than 10 years, but less than or	35.5	17.93	18.4	9.12
	More than 15 years	30.7	15.5	22.1	10.94
Number of employees	Less than 50	6	3.04	37.4	18.54
	51-100	6.6	3.34	52.1	25.84
	101-500	21.7	10.94	10.4*	5.17
	501-1000	24.7	12.46	-	-
	1001-2000	26.5	13.37	-	-
	Over 2000	14.5	7.29	-	-
Annual gross sales	Less than or equal to NZ\$ 5 million	1.8	0.91	23.9	11.85
	More than NZ\$ 5 million, but less than	10.2	5.17	17.8	8.81
	More than NZ\$ 10 million, but less than	22.3	11.25	30.1	14.89
	More than NZ\$ 15 million, but less than	33.7	17.02	24.5	12.16
	More than NZ\$ 20 million	31.9	16.11	3.7	1.82

**Table 5-23: Company profile for New Zealand firms\***

Activity	Percentage	
	3PL providers	3PL users
Transportation	91.57	74.23
Warehousing	84.34	62.58
Purchasing	67.47	52.76
Consolidation and distribution	63.86	58.90
Inventory management	58.43	57.06
Product returns	53.01	44.17
Order management	53.01	42.94
Cross docking	54.22	33.13
Packaging	58.43	44.17

**Table 5-24: Perceived levels of importance of logistics activities performed (New Zealand 3PL providers) or outsourced (New Zealand 3PL users)**

\* The annual gross sales for each of these firms are less than NZ\$20 million, so the researcher deems them as SMEs.

### 5.2.1.2 Measurement model – NZ 3PL providers

This research used the same content as China's survey for New Zealand data (including 3PL providers and users). Conducting a set of analyses was to test reliability and validity of constructs after data collection. SPSS and AMOS 19 were used for statistical analysis.

#### *Unidimensionality and reliability*

Using two step methods are to test construct reliability (Narasimhan and Jayaram, 1998). First, unidimensionality of the scales was examined by using exploratory factor analysis (EFA). Second, the data reliability is assessed by using Cronbach's Alpha ( $\alpha$ ). EFA with Varimax rotation was used to determine the major constructs measured by the items. Cronbach's Alpha ( $\alpha$ ) was used to assess the internal consistency of each construct (Nunnally, 1978).

According to the results of EFA (Table 5-25), there are at least three measured variables to explain each construct in the sample of 3PL providers. In the CFA model, the researcher used maximum-likelihood estimation to justify the factor structure. Usually  $\chi^2$  value and degrees of freedom, normed Chi-Square, the CFI, and the RMSEA provide sufficient information to evaluate the overall model (Hair et al., 2010)\*. In addition, the values of IFI and TLI will be reported as well.

The model fit indices for 3PL providers are  $\chi^2 (352) = 540.145$ ,  $p < 0.001$ ; the normed Chi-Square = 1.535; CFI = 0.91; IFI = 0.91; TLI = 0.90; and, RMSEA = 0.057, indicating that both models were acceptable. All factor loadings were greater than 0.50 and highly significant at  $p$ -value less than 0.001 (Hair et al., 2010).

Table 5-26 illustrates the values of Cronbach's Alpha ( $\alpha$ ), composite reliability, and variance extracted for the sample of 3PL providers. All Cronbach's Alpha ( $\alpha$ ) and composite reliability are above 0.70 and the values of variance extracted are greater than 0.50. Therefore, convergent validity is established.

---

\* The values of model fit indices are the same mentioned in the first section of China data analysis.

	3PL Providers						
	Procurement	Benefit to 3PL provider	Asset specificity	Value to client	Size	Uncertainty	Frequency
NL-Cord	.063	.119	<b>.734</b>	.259	.073	.175	.037
NL-Inves	.032	.082	<b>.824</b>	-.024	-.035	.074	.129
NL-Leve	.030	.123	<b>.569</b>	-.180	.429	.263	-.070
NL-Rout	.015	-.023	<b>.847</b>	-.078	-.022	.061	.172
NL-Demo	-.094	.044	.437	.150	.091	<b>.615</b>	-.004
NL-Conf	.308	-.013	.012	.116	.113	<b>.716</b>	.074
NL-Eva	.047	.187	.229	.050	-.078	<b>.691</b>	.010
NL-Period	.187	.072	.026	.027	.184	<b>.695</b>	.326
NL-Fix	.174	.122	.077	.149	.161	.354	<b>.561</b>
NL-Moni	.222	-.002	.192	.098	.159	.038	<b>.725</b>
NL-FreInc	.027	.304	.162	.150	.323	.101	<b>.570</b>
NL-PurcOrd	.129	.099	.012	.069	<b>.698</b>	.118	.139
NL-Conso	.075	.088	-.039	.213	<b>.854</b>	.112	.053
NL-OrdLag	.160	.085	.113	.092	<b>.683</b>	-.054	.235
NL-PA-Cat	<b>.708</b>	.172	.086	.021	-.086	.086	.200
NL-PA-Mgk	<b>.730</b>	.140	.009	.076	.029	.114	.110
NL-PA-Qua	<b>.673</b>	.121	.085	.084	.151	.081	.171
NL-PA-Pro	<b>.715</b>	-.117	-.148	.134	.191	-.021	.119
NL-PA-Bid	<b>.760</b>	.006	-.074	.231	.086	.066	.169
NL-PA-Cos	<b>.718</b>	.252	.117	.106	.014	.144	-.137
NL-PA-Sup	<b>.740</b>	.208	.076	.177	.186	.068	-.173
NL-Risk	.217	.110	-.054	<b>.820</b>	.126	.147	.168
NL-MaiRel	.164	.213	.066	<b>.793</b>	.161	.105	.058
NL-CorBus	.307	.235	.039	<b>.775</b>	.097	.055	.114
NL-OP-Sat	.226	<b>.660</b>	.113	.275	.095	-.042	-.181
NL-OP-Cost	.214	<b>.753</b>	.002	.233	.126	.090	.019
NL-OP-Mora	.102	<b>.815</b>	.119	-.089	-.041	.116	.180
NL-OP-Rel	.091	<b>.796</b>	.128	.148	.245	-.003	.025
NL-Comfor	.080	<b>.673</b>	-.093	.149	.002	.210	.345
Total variance explained				65.79%			

**Table 5-25: Exploratory factor analysis for New Zealand 3PL providers**

Construct	Indicator	Standardized weight	Cronbach's Alpha ( $\alpha$ )	Composite reliability	Variance extracted
AS	NLRout - AS	0.793	0.789	0.828	0.549
	NLLeve - AS	0.611			
	NLInves - AS	0.816			
	NLCord - AS	0.765			
UN	NLPeriod - UN	0.756	0.805	0.814	0.525
	NLEva - UN	0.755			
	NLConf - UN	0.783			
	NLDemo - UN	0.613			
FR	NLFreInc - FR	0.694	0.735	0.773	0.533
	NLMoni - FR	0.785			
	NLFix - FR	0.697			
SZ	NLOrdlag - SZ	0.682	0.733	0.796	0.570
	NLConso - SZ	0.879			
	NLPurcOrd - SZ	0.641			
PROCU	NLPAQua - PROCU	0.761	0.872	0.893	0.546
	NLPAMgk - PROCU	0.744			
	NLPACat - PROCU	0.721			
	NLPAPro - PROCU	0.721			
	NLPABid - PROCU	0.651			
	NLPACos - PROCU	0.803			
	NLPASup - PROCU	0.831			
VTC	NLCorbus - VTC	0.848	0.862	0.896	0.742
	NLMaiRel - VTC	0.767			
	NLRisk - VTC	0.855			
BT3PL	NLOPMora - BT3PL	0.721	0.847	0.875	0.584
	NLOPCost - BT3PL	0.778			
	NLOPSat - BT3PL	0.719			
	NLOPreI - BT3PL	0.772			
	NLComfor - BT3PL	0.722			

Notes:  $\chi^2$  (352) = 540.145,  $\chi^2/df$  = 1.535, CFI = 0.91, RMSEA = 0.057. All are significant ( $p < 0.001$ ).

**Table 5-26: Cronbach's Alpha ( $\alpha$ ) and composite reliability for New Zealand 3PL providers**

*Validity*

For the validity test, the same procedure was conducted in the analysis of China 3PL providers. The diagonal values are variance extracted. In each column, the values are the correlation estimate between every two constructs. The research was used to compare the average variance-extracted values for any two constructs with the square of the correlation estimate between these two constructs. Based on the table 5-27, all figures were calculated, and they were above 0, representing that items assigned to one construct were not significantly loading on others. Thus, discriminant validity is established in the sample of 3PL providers.

	<b>AS</b>	<b>UN</b>	<b>FR</b>	<b>SZ</b>	<b>PROCU</b>	<b>VTC</b>	<b>BT3PL</b>
<b>AS</b>	0.549						
<b>UN</b>	0.391***	0.525					
<b>FR</b>	0.403***	0.350***	0.533				
<b>SZ</b>	0.101*	0.344**	0.486***	0.570			
<b>PROCU</b>	0.154*	0.420***	0.377***	0.305*	0.546		
<b>VTC</b>	0.081**	0.370***	0.482***	0.451***	0.407***	0.742	
<b>BT3PL</b>	0.196*	0.331***	0.455***	0.313***	0.453***	0.513***	0.584

*Note: \*P<0.05 \*\*P<0.01 \*\*\*P<0.001*

**Table 5-27: Discriminant validity for New Zealand 3PL providers**

### 5.2.1.3 Structural equation model – NZ 3PL providers

Based on the overall assessment of the measurement model, the next step focuses on the structural model in order to test the hypothesized relationships. AMOS 19 was used to assess the individual hypotheses through reviewing the direction and significance in the AMOS output.

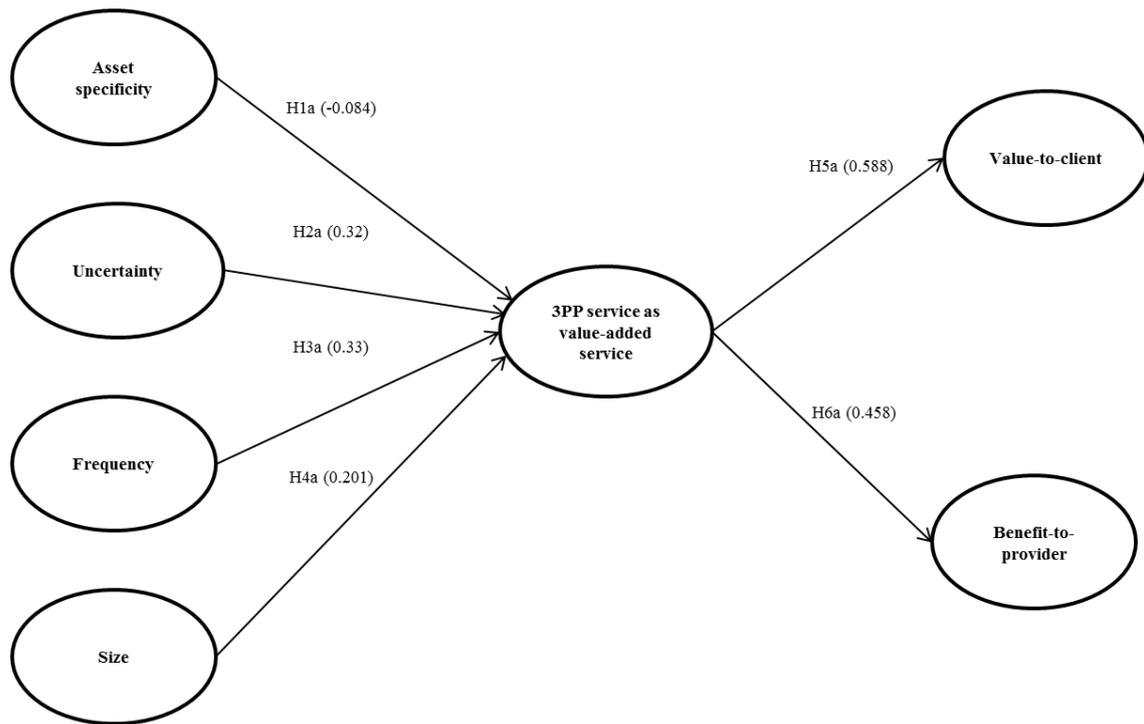
The model fit indices show that the hypothesised structural model achieves acceptable fit for the sample data ( $\chi^2(365) = 655.156, p < 0.001$ ; the normed Chi-Square = 1.795; CFI = 0.86; IFI = 0.86; TLI = 0.85; and, RMSEA = 0.069). AMOS outputs on hypothesized paths' standardized regression weights with relevant critical ratio (CR)

and  $p$ -values were then examined to test the individual hypotheses. Table 5-28 provides the results of the structural model test.

In the sample of 3PL providers, uncertainty, frequency, and size have a significant impact on procurement ( $b = 0.32$ ,  $p < 0.01$ ;  $0.33$ ,  $p < 0.01$ ;  $0.201$ ,  $p < 0.05$  respectively). These results confirm our hypotheses for H2a, H3a, and H4a. However, the relationship between asset specificity and procurement is not significant ( $b = -0.084$ , ns), suggesting rejection for H1a. The paths from procurement to value-to-client and benefit-to-provider are highly significant ( $b = 0.588$  and  $0.458$  respectively,  $p < 0.001$ ). Thus, the hypotheses of H5a and H6a are supported.

Path	Standardized weight	CR	$p$	Note
H1a    Asset specificity → Procurement	-0.084	-0.974	0.33	Not significant
H2a    Uncertainty → Procurement	0.32	3.015	$0.003 < 0.01$	Supported
H3a    Frequency → Procurement	0.33	3.211	$0.001 < 0.01$	Supported
H4a    Size → Procurement	0.201	1.992	$0.046 < 0.05$	Supported
H5a    Procurement → Value-to-client	0.588	5.802	$< 0.001$	Supported
H6a    Procurement → Benefit-to-provider	0.458	4.636	$< 0.001$	Supported

**Table 5-28: Hypothesized path testing for New Zealand 3PL providers**



**Figure 5-3: Structural equation model for New Zealand 3PL providers**

**5.2.1.4 Measurement model – NZ 3PL users**

The process of data analysis for New Zealand 3PL users was the same as the procedure used for New Zealand 3PL providers. This section reports the results by using SPSS and AMOS 19.

*Unidimensionality and reliability*

According to the result of EFA (Table 5-29), there are at least three measured variables to explain each construct in the samples of 3PL users. In the CFA model, the researcher used maximum-likelihood estimation to justify the factor structure.

The model fit indices\* for 3PL users are  $\chi^2 (373) = 454.330, p < 0.001$ ; the normed Chi-Square = 1.218; CFI = 0.97; IFI = 0.97; TLI = 0.96; and, RMSEA = 0.037, indicating that both models were acceptable. All factor loadings were greater than 0.50 and highly significant at  $p$ -value less than 0.001 (Hair et al., 2010).

Table 5-30 illustrates the values of Cronbach’s Alpha ( $\alpha$ ), composite reliability, and variance extracted for the samples of 3PL users. All Cronbach’s Alpha ( $\alpha$ ) and

\* The values of model fit indices are the same mentioned in the first section of China data analysis.

composite reliability are above 0.70 and the values of variance extracted are greater than 0.50. Therefore, convergent validity is established.

	3PL Users						
	Procurement	Value to client	Uncertainty	Asset specificity	Frequency	Size	Benefit to 3PL provider
NU-Cord	.162	.138	.097	<b>.781</b>	.039	.052	.147
NU-ComPos	.143	.141	-.041	<b>.822</b>	.070	.064	.067
NU-TimEff	.149	.098	-.020	<b>.780</b>	-.006	-.041	.188
NU-Rout	.011	.064	.062	<b>.789</b>	.104	.118	-.075
NU-Demo	.033	-.035	<b>.882</b>	-.027	-.064	.038	.112
NU-Conf	.069	-.089	<b>.881</b>	-.025	-.026	.080	.138
NU-Req	.098	-.056	<b>.805</b>	.093	.128	.144	.156
NU-Const	.039	-.016	<b>.814</b>	.065	.213	.150	.114
NU-OrdFr	.067	-.010	.118	.117	<b>.858</b>	.070	.054
NU-Moni	.064	.034	.016	.132	<b>.863</b>	.039	.156
NU-FreInc	.143	.122	.058	-.049	<b>.837</b>	.104	-.023
NU-Bene	.029	.012	.120	-.016	.112	<b>.867</b>	-.004
NU-Vol	.113	-.102	.225	.092	.019	<b>.790</b>	.136
NU-Conso	-.046	.099	.045	.124	.084	<b>.862</b>	.134
NU-PA-Cat	<b>.797</b>	.109	.112	.034	.053	.064	.008
NU-PA-Mgk	<b>.888</b>	.042	-.078	.088	-.006	.065	.060
NU-PA-Qua	<b>.766</b>	.079	.109	.051	.029	.180	-.120
NU-PA-Pro	<b>.891</b>	.020	.057	.054	.004	-.049	.112
NU-PA-Bid	<b>.785</b>	.039	.080	.133	.059	-.029	.067
NU-PA-Cos	<b>.746</b>	.050	.049	.062	.158	-.005	.107
NU-PA-Sup	<b>.801</b>	-.073	-.052	.112	.045	-.081	.119
NU-SO-Cos	.101	<b>.816</b>	-.072	.012	.075	.135	.009
NU-SO-Fle	.018	<b>.753</b>	-.092	.166	.053	-.137	-.133
NU-SO-Ser	.060	<b>.894</b>	-.040	.082	.017	.039	.089
NU-SO-Emp	.025	<b>.802</b>	.014	-.006	.017	.013	.221
NU-SO-Com	.025	<b>.736</b>	-.063	.186	.000	-.075	-.017
NU-MaiRel	.020	<b>.814</b>	.042	.049	.012	.043	.043
NU-ShaPur	.245	.125	.107	.091	.045	.096	<b>.704</b>
NU-SucOut	.060	.023	.224	.146	-.004	.122	<b>.802</b>
NU-ComWor	.005	.038	.177	.062	.150	.045	<b>.817</b>
Total variance explained				71.84%			

**Table 5-29: Exploratory factor analysis for New Zealand 3PL users**

Construct	Indicator	Standardized weight	Cronbach's Alpha ( $\alpha$ )	Composite reliability	Variance extracted
AS	NURout - AS	0.623	0.835	0.827	0.547
	NUTimEff - AS	0.769			
	CUComPos - AS	0.746			
	NUCord - AS	0.821			
UN	NUConst - UN	0.877	0.892	0.872	0.634
	NUReq - UN	0.868			
	NUConf - UN	0.621			
	NUDemo - UN	0.754			
FR	NUFreInc - FR	0.792	0.843	0.800	0.642
	NUMoni - FR	0.781			
	NUOrdFr - FR	0.657			
SZ	NUConso - SZ	0.807	0.830	0.879	0.754
	NUVol - SZ	0.78			
	NUBene - SZ	0.794			
PROCU	NUPAQua - PROCU	0.662	0.918	0.890	0.540
	NUPAMgk - PROCU	0.841			
	NUPACat - PROCU	0.68			
	NUPAPro - PROCU	0.955			
	NUPABid - PROCU	0.657			
	NUPACos - PROCU	0.693			
	NUPASup - PROCU	0.744			
BT3PL	NUComWor - BT3PL	0.786	0.759	0.818	0.604
	NUSucOut - BT3PL	0.797			
	NUShaPur - BT3PL	0.604			
VTC	NUSOSer - VTC	0.903	0.895	0.903	0.616
	NUSOFle - VTC	0.606			
	NUSOCos - VTC	0.843			
	NUSOEmp - VTC	0.766			
	NUSOCom - VTC	0.536			
	NUMaiRel - VTC	0.721			

Notes:  $\chi^2(373) = 454.330$ ,  $\chi^2/df = 1.218$ , CFI = 0.97, RMSEA = 0.037. All are significant ( $p < 0.001$ ).

**Table 5-30: Cronbach's Alpha ( $\alpha$ ) and composite reliability for New Zealand 3PL users**

*Validity*

For the validity test, the same procedure, mentioned in the section of China 3PL provider, was used to compare the average variance-extracted values for any two constructs with the square of the correlation estimate between these two constructs. Based on the table 5-31, all figures were calculated, and they were above 0, representing items assigned to one construct were not significantly loading on others. Thus, discriminant validity is established in the sample of 3PL users.

	<b>AS</b>	<b>UN</b>	<b>FR</b>	<b>SZ</b>	<b>PROCU</b>	<b>VTC</b>	<b>BT3PL</b>
<b>AS</b>	0.547						
<b>UN</b>	0.155**	0.634					
<b>FR</b>	0.179***	0.391**	0.642				
<b>SZ</b>	0.162*	0.364***	0.228*	0.754			
<b>PROCU</b>	0.252**	0.179**	0.188**	0.044**	0.540		
<b>VTC</b>	0.326**	0.444**	0.231**	0.295**	0.218**	0.604	
<b>BT3PL</b>	0.269**	0.031*	0.127**	0.047*	0.127**	0.152**	0.616

*Note: \*P<0.05 \*\*P<0.01 \*\*\*P<0.001*

**Table 5-31: Discriminant validity for New Zealand 3PL users**

### 5.2.1.5 Structural equation model – NZ 3PL users

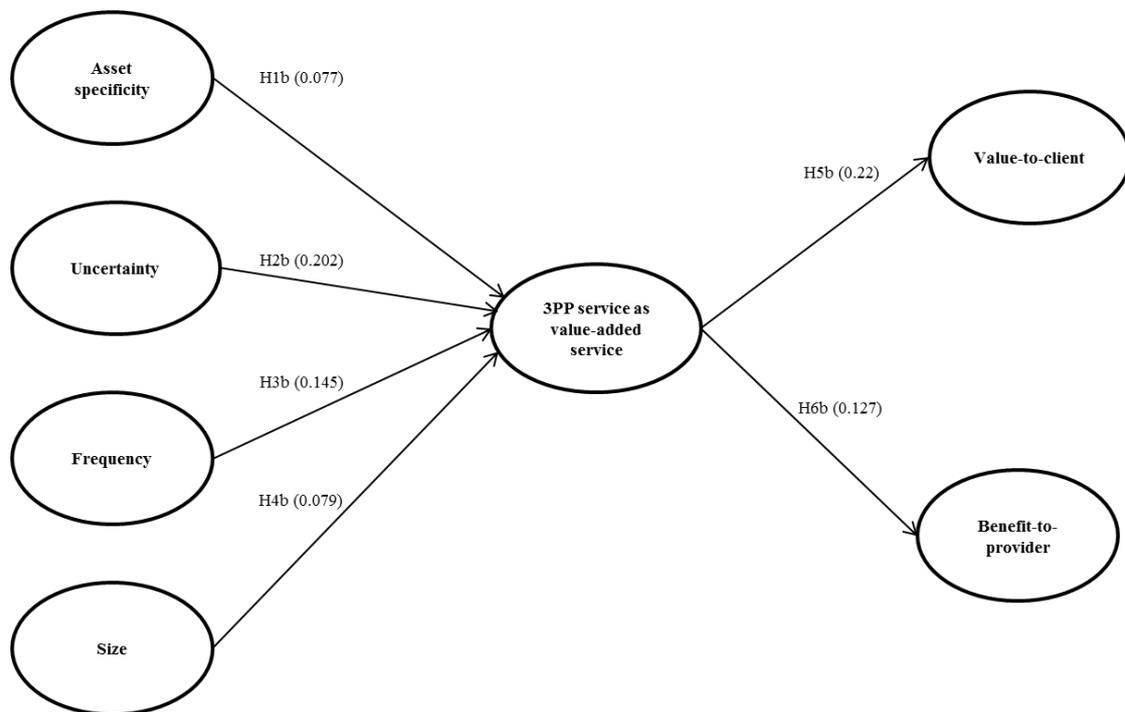
The proposed structural model was analysed with AMOS 19 to test the hypothesized relationships. The fit statistics show that the structural model for 3PL users was acceptable ( $\chi^2$  (393) =613.199,  $p < 0.001$ ; the normed Chi-Square = 1.560; CFI = 0.92; IFI = 0.92; TLI = 0.91; and, RMSEA = 0.059). AMOS outputs on hypothesized paths' standardized regression weights with relevant critical ratio (CR) and  $p$ -values were then examined to test the individual hypotheses. Table 5-32 provides the results of the structural model tested.

In the sample of 3PL users, the relationship between uncertainty and procurement is significant ( $b= 0.202$ ,  $p < 0.05$ ), supporting H2b. However, the path loadings from asset specificity, frequency, and size to procurement are not significant ( $b= 0.077$ ,  $b=$

0.145,  $b= 0.079$ , ns), suggesting rejection for H1b, H3b, and H4b. The influence of procurement on value-to-client and benefit-to-provider is significant ( $b= 0.22$  and  $0.127$ ,  $p < 0.05$ ). Thereby, the hypotheses of H5b and H6b are supported.

Path	Standardized weight	CR	$p$	Note
H1b Asset specificity → Procurement	0.077	1.293	0.196	Not significant
H2b Uncertainty → Procurement	0.202	2.099	0.036 < 0.05	Supported
H3b Frequency → Procurement	0.145	1.656	0.098	Not significant
H4b Size → Procurement	0.079	1.293	0.196	Not significant
H5b Procurement → Value-to-client	0.22	2.485	0.013 < 0.05	Supported
H6b Procurement → Benefit-to-provider	0.127	1.567	0.017 < 0.05	Supported

**Table 5-32: Hypothesized path testing for New Zealand 3PL users**



**Figure 5-4: Structural equation model for New Zealand 3PL users**

## 5.2.2 Qualitative data analysis – Interviews

### 5.2.2.1 Company profiles – NZ 3PL providers and users

#### New Zealand – 3PL providers (NL)\*

Code used in text	Official position	Location of Head office in NZ	Industrial types
NL-A	Department Manager	Auckland	Logistics
NL-B	General Manager	Auckland	Logistics
NL-C	General Manager	Auckland	Logistics
NL-D	Department Manager	Auckland	Logistics
NL-E	General Manager	Auckland	Logistics
NL-F	Department Manager	Auckland	Logistics
NL-G	Department Manager	Auckland	Logistics
NL-H	Department Manager	Auckland	Logistics
NL-I	Department Manager	Auckland	Logistics
NL-J	General Manager	Auckland	Logistics
NL-K	General Manager	Auckland	Logistics

**Table 5-33: Overview of respondent profile for New Zealand 3PL providers**

#### **NL-A Company**

NL-A Company, commenced operations in 1992, specialises in handling grocery and food related products, consumer goods and pharmaceutical products with a customised contract warehousing and a nationwide network. The company has a number of longstanding clients which are household names in the grocery sector including Hutchinsons, Newco Ltd, PZ Cussons NZ Pty Ltd, Wilson Consumer products, Kerry NZ and so forth. The services include completing container handling from wharf to door, devanning and stock consolidation, storage as required, stock control and rotation, order processing from advice received, pick and pack, and scan picking for ultimate accuracy. Currently, its distribution is direct to central warehousing for all major grocery leaders and direct to stores in the main North Island and South Island destinations. The vision of the company is “to be the best 3PL provider in New Zealand”. Its values are classified by several subjects: teamwork, communication, passion and quality.

#### **NL-B Company**

NL-B Company, established in 1961, is one of the major multinational enterprises in the world. The company owns rich logistics facilities and resources. It operates more

\* All companies are anonymous.

than 4,000 logistics vehicles, including a large number of cargo transport vehicles, (the largest having carry capacity of 8,000 tons), 2.49 million square meters of storage ground, and 2.97 million square meters of warehouse. The company provides high value-added services for customers in household, chemical, power and financing sectors. The company owns and operates 32 terminals worldwide, with 157 berths offered. It owns more than 1,000 companies and branches in over 50 countries and regions and hires 130,000 employees in total.

### **NL-C Company**

NL-C Company offers integrated services, and tailored, customer-focused solutions for managing and transporting letters, goods and information. The company has four divisions, namely express division, global forwarding freight division, supply chain division, and global mail division. The company has centralized its internal services which support the entire Group, including finance operations, IT, and procurement. This consolidation enables it to increase the flexibility of business, improve service quality, and leverage economies of scale and cost/benefits. The logistics services of the company include road, air and sea transportation. The objective of the company is to become a logistics company for the world.

### **NL-D Company**

NL-D Company, established in 1976, has been through a series of mergers to maintain a key position in the global transport industry. The company is a global supplier of transport and logistics solutions, has offices in more than 60 countries all over the world, and has an international network of partners and agents, which make the company a truly global player offering services worldwide. It also has offices in 34 countries, and its logistics services include road, air and sea. Offering solutions is a key value-added service for the company. The company can design and deliver logistics solutions, and it adds value by increasing operational and cost efficiency. The company employs over 5,000 people and operates more than 130 warehouses comprising a total of 2,200,000 square meters.

### **NL-E Company**

NL-E Company was established in 1871. The company is committed to create the perfect logistics chain. The logistics services of the company include individual customer enquiries within the context of value-added services, packing and unpacking, handling all relevant import and export documents, larger consignments, labelling, customs clearance, and inland distribution. Its principle is to act responsibly towards its customers, partners and suppliers at all times. As a premium logistics service provider, the company tries to meet the customer's specification as quickly and smoothly as possible. By using an advanced information system, the company is enabled to establish efficient national and international networks.

### **NL-F Company**

NL-F Company has operated as a healthcare distributor within the New Zealand market for 15 years. It is owned by the EBOS Group Limited. Additionally, its sister companies, ProPharma and PWR provide pharmaceutical wholesaling solutions throughout New Zealand. The company assists over 40 pharmaceutical, health and beauty care manufacturers to manage their businesses within the New Zealand market. Logistics solutions are customised to meet the needs of individual principals. The company is committed to being quality driven, healthcare focused and service orientated. The company has developed a range of support services that allows multinational healthcare companies to operate in the New Zealand market with infrastructure that suits their business size. The customized services include order entry, customer support, pick, pack and despatch, freight management, IT solutions, electronic ordering, quality systems, secondary packaging, invoicing, debt collection, customs clearance, import GST, inventory management, registration/sponsorship, tendering, specialised channels of information, administration/support, industry group knowledge, cold chain distribution, and humidity controlled storage.

### **NL-G Company**

NL-G Company, established in Melbourne in 1956, is the largest privately owned supply chain solutions company in the Asia Pacific region. Today, the company operates more than 3.2 million square metres of warehousing and nearly 5,000 vehicles across 10 countries. Across the Asia Pacific region, it provides more than 15 million pallets of goods to retailers and serves nine of the region's top ten fast moving consumer goods producers.

In New Zealand, it has about 100 thousand square metres of warehouse space available. The company operates approximately 200 vehicles that focus on different industries. The major market focus is on FMCG markets like Unilever and Nestle. Also, it has other services for the clients such as freeze logistics, and point-of-sales services.

### **NL-H Company**

NL-H Company operates in the domestic supply chain and in the international freight industry. The services provided range from international air and sea freight operations, customs brokerage, liquid logistics to warehousing, and distribution. With teams and branches across Australia, China, New Zealand and the United States, the company continues to expand its global footprint.

The company began its operations in Auckland, New Zealand, in 1978, soon growing into New Zealand's most extensive logistics network. The company became truly global in 1999 with the acquisition of businesses in both Asia and the United States. "Special people, special company" embodies its unique culture. The company has developed a successful style of doing business not only in New Zealand, but around the world. The main customers are medium-sized enterprises. The current annual turnover is 1.2 billion.

### **NL-I Company**

NL-I Company, established in 1989, is the largest privately owned freight forwarder in New Zealand. The company offers the true total logistics services. There are three main divisions for the company: international freight and customs services, warehousing and distribution, and global supply chain. The primary services include import/export air freight, import/export sea freight, transport services, customs clearances, warehousing and distribution, IT solutions, pallet consolidation and storage, product, carton and pallet picks, despatch and delivery, fully EDI capable, vendor management, document management, inventory management, quality assurance inspection and product testing, returns reworking and disposal, scan packing, and so forth.

### **NL-J Company**

NL-J Company, first registered in 1992, specializes in providing global freight forwarding and 3PL warehousing and distribution services. The company is privately owned, and has 9,500 square meters of warehouse. Its primary services include importing, exporting, airfreight, seafreight, warehousing, storage, and distribution.

The company has a customer service team and a sales team to provide service and support to its valued clients, and an import and export operation that has a wealth of industry knowledge and experience.

Presently, the company has provided some value-added services to its clients, including making promotional packs, labelling for import products, tagging for wine industry and apparel industry.

### **NL-K Company**

NL-K Company is one of New Zealand's largest transport businesses servicing the Northland region and nationwide, with branches in Auckland, Whangarei, Kaikohe, Kerikeri, Kaitaia, Dargaville and Waipu. It operates over 600 road vehicles and has access to 2870 rail wagons, and offers a diverse range of businesses, including general

freight, tip trucks, relocation, refrigeration, livestock transport, petroleum cartage, and bulk cartage.

The company also has parcel services, including the services for online web-based label printing, tracking of transit goods through the websites, and electronic invoice statements. The auto express services provide an overnight service between Auckland and Wellington, and two day services between Auckland and Christchurch. Its logistics service offers a complete solution to the client's supply chain needs, including storage, pallet and box picks, pallet consolidation, trucking consolidation, and despatch and delivery. Its global forwarding services include full customs, full container-load, and door-to-door export and import worldwide.

#### *New Zealand- 3PL users (NU)*\*

Code used in text	Official position	Location of Head office in China	Industrial types
NU-A	Department Manager	Auckland	Public admin/Health
NU-B	Department Manager	Auckland	Food/Beverage
NU-C	Department Manager	Auckland	Pharmaceutical
NU-D	Department Manager	Auckland	Food/Beverage
NU-E	Department Manager	Auckland	Wine
NU-F	Department Manager	Auckland	Healthcare

**Table 5-34: Overview of respondent profile for New Zealand 3PL users**

#### **NU-A Company**

The major services of NU-A Company include screening service, healthy environment, emergency planning and response, and so on. It is committed to working collaboratively across the Auckland region. Its vision is “being healthy, promoting future wellbeing”, and the values of the company are “being active, building and maintaining healthy relationships, valuing diversity, and acting with integrity”.

#### **NU-B Company**

NU-B Company was founded in 1929. The range of its main products includes many brands of beers. The company owns and operates four breweries around New Zealand.

\* All companies are anonymous.

Its innovative formal waste, water and energy reduction programs have been in place since 1998. The slogan of the company is “the impossible is only that which we have not yet learnt to do”. Its continued commitment to quality and innovation has resulted in a number of world-renowned and prestigious awards recognizing the company’s employment leadership and winning marketing, and brewing expertise. The company has distributors around the globe that stock its products.

### **NU-C Company**

NU-C Company was founded in 1967, which is one of the fastest growing pharmaceutical development and manufacturing companies in Oceania. Outstanding customer service and the highest manufacturing standards have driven its success. The company is currently enjoying significant growth as it expands to meet international demand. Considerable investment in product development laboratories could help its commitment in both domestic and global markets.

A flexible and highly-responsive distribution channel allows the company to respond quickly and effectively to the changing needs of its customers. Its supply chain activities are orchestrated from a world-class distribution centre in Auckland. The company has a strong commitment to improvement of performance and productivity. It encourages its people to develop new ideas and put fresh approaches into practice, so that it can continually enhance its service levels.

### **NU-D Company**

NU-D Company is one of the leading firms in the food industry. It has two major branches located in Australia and New Zealand. Its products are cereal and snacks. The company’s cereal has been part of Kiwi breakfasts for over 70 years. In 1929 New Zealand became the first country to receive products exported from the company’s factory in Australia and this exporting of products continues today. The company has established a strong presence in the New Zealand market with many brands such as Corn Flakes, Just Right, Special K, etc.

### **NU-E Company**

NU-E Company, established in 1974, was born with the New Zealand wines revolution, and has contributed greatly to its success. It has various ranges of products, such as, single vineyard, Ararimu series, and Matua Valley series. The company targets itself as an international fine wine company. As with the entire development of the company, partnership decisions are made on the basis of high quality standards and particular personal qualities a new partner would bring to the partnership. Currently, the company has become part of the Beringer Blass family; through this association the brand of its fine wine can be recognized globally.

### **NU-F Company**

NU-F Company has more than 30 years' experience bringing healthcare products from global suppliers to the New Zealand market. It is one of New Zealand's major importers and distributors of healthcare products. Its products include biological products, consumables, gift lines and bottles and containers. The company is committed to providing affordable, high quality healthcare products to pharmacies and supermarket chains. The company is dedicated to developing its 'end-to-end' service, since it could offer its global suppliers a seamless, end-to-end service to bring the suppliers' products to the New Zealand market. It can have an integrated computer capability with multinational, multilingual, and multi-currency functionality, have committed management team, assure quality check, offer target sales and marketing, and have regulatory expertise.

#### **5.2.2.2 Reliability and validity for qualitative data**

Regarding the reliability and validity of this research, the analysis process is consistent with the methods used with China data.

As to the reliability of the research, colleagues were used to review the questions, and conducted semi-structured questions to ensure that all informants answered the same questions. The researcher reviewed the transcripts and made sure that the informant's answers are repeatable. For the validity of the research, the researcher used a

triangulation method to check the findings deriving from qualitative and quantitative data, and invited the informants to review the original transcripts.

### **5.2.2.3 Process of data analysis**

The process of dealing with New Zealand data was the same as the method used in analysis of Chinese data. All interviews were transcribed into text. The transcripts were sent to the informants for review so it ensured that the content of transcripts was consistent with their original expression. No biased information existed during this process.

Using NVivo 9.0 helped the researcher analyse the data. Open coding followed the same steps used in analysing Chinese data, reading and checking all parts of the interview transcripts to identify the hypothesized relationships, to reveal similarities and differences of strengths and limitations, and to compare the overall perception of 3PP service within the two groups (3PL providers and users). Next, the researcher categorized the paragraphs into specific theoretical themes in tree nodes (Bazeley, 2007) (see tables 5-35 and 5-36).

In addition, the researcher reviewed the themes and original data, and ensured that the whole analysis was consistent. Also, the researcher put some other important information (e.g. overall perceptions of 3PL providers and users) into free nodes.

In terms of the impact of asset specificity, uncertainty, frequency, and transaction size on 3PP and the effect of 3PP on value-to-client and benefit-to-provider, the informants had different perceptions, so the researcher compared the companies to reveal the similarities and differences among them, and obtained the overall perception of related relationships presented by both parties.

No	Themes	Sub-themes	Code examples
1	Asset specificity	Recruitment of purchasing professionals	Buyers working at customer's company, Company's recruitment website
		Additional investments for 3PP service	Logistics infrastructure, Logistics facilities
		Building close relationships with clients	Trust mechanism, Interpersonal relationship
2	Uncertainty	Demand for outsourcing purchasing services	Small market size, Stable for a long-term, No significant change
		Return of value to 3PL providers	Minor overlapped areas, Ability to maintain profits
		Change of customer orders	Orders regularly, No big changes
3	Frequency	Frequency of receiving purchase orders	Weekly orders, Daily orders
		Reduction of fixed cost per transaction	Increase of the efficiency of facilities, Inventory turnover
		Increase of frequency resulting in having more purchasing power	Combined as a bid order, High volumes
4	Size	Larger transaction size	Increase of negotiation power, Bid a better price
		Increase of aggregated orders	Reducing the handling, Consolidate small orders, Batch orders
5	Value-to-client		Not need specialized staff, Reduce administration costs
6	Benefit-to-provider		Getting more close relationships to customers, Tied-in customers

**Table 5-35: Examples of coding for New Zealand 3PL providers**

No	Themes	Sub-themes	Code examples
1	Asset specificity	Recruitment of purchasing professionals	Human resource agents, Purchasing expertise from 3PL users
		Additional investments for 3PP service	Warehousing, Transportation
		Building close relationships	Meet requirements, Good relationships
2	Uncertainty	Demand for outsourcing purchasing services	Not move around a lot, Stable demand
		Achieving company's goals	Low cost, More values
		Change of purchase orders	No change, Stable market
3	Frequency	Frequency of placing purchase orders	Monthly orders
		Monitoring purchasing activities	Not part of core business, Non critical products
		Enhancing purchasing power	Depends on the size of orders, Not related to the frequency
4	Size	Larger transaction size	Concerns of consolidating the orders, Not sure to find balance point during negotiation process
		Increase of aggregated orders	No testimony for aggregating ability, Not sure to have aggregating ability
5	Value-to-client		Possibility for cheap price, Purchasing cost reduction
6	Benefit-to-provider		Leverage purchasing price, Value business model

**Table 5-36: Examples of coding for New Zealand 3PL users**

#### **5.2.2.4 Analysis of perceptions for NZ 3PL providers**

The interview questions for New Zealand interviewees are the same as the questions for China respondents. There are two or three questions for each category— asset specificity, uncertainty, frequency, and transaction size – to evaluate the perceptions of 3PL providers and users through the positive, negative, or neutral attitudes.

The questions for asset specificity focus on three perspectives: recruitment of purchasing professionals, additional investments for 3PP service, and building close relationships with clients.

##### *Recruitment of purchasing professionals*

3PL providers positively indicate that they prefer to recruit purchasing experts who have obtained the purchasing experience in 3PL user’s organization. Alternatively, they may get the qualified purchasing experts from their own recruitment websites. One of the interviewees stated:

“As we are a global logistics company, we prefer to recruit some purchasing professionals who have obtained the purchasing experience in our customer organizations. Those people could quickly adapt to this new position and give play to their purchasing strengths” (NL-C).

“We could get those purchasing experts based on our recruitment websites” (NL-G).

One logistics provider points out that the company needs to continuously invest in human resource assets. The interviewee stated:

“I think it could be quite specialized in the industry. They need to recruit sufficient qualified people to continually move technology and demand for the market. They are always investing in this [human assets]” (NL-E).

*Additional investments for 3PP service*

3PL providers positively express that they do not need to have large and substantial funds for development of the current logistics infrastructure since their logistics facilities are quite mature. One of the interviewees said:

“I do not think that we need to have more investment in warehousing, technology, and equipment because our logistics infrastructure is quite mature. Offering such value-added services could enhance the utility of our facilities” (NL-A).

“I believe that our company has strong logistics infrastructure so that I do not think that we need such investments” (NL-D).

“We do not need to consider such investment since we have owned the physical facilities for introducing 3PP service” (NL-H).

*Building close relationships with clients*

3PL providers positively state that they have established close relationships with their customers, so the customers can pass on supply information to 3PL providers. This evidence can be found from one of the interviewees:

“We have built high level of trust confidence with our customers so that they could release supply information to us, which is quite important for us to implement this new service” (NL-A).

“We do not need to do that because the current relationships with our clients are quite good. Some of them have established strategic partnerships with us. We will continuously maintain close relationships with our clients” (NL-I).

One logistics provider indicates that the company needs to invest more effort to maintain good relationships with customers since they have discretion to choose other logistics providers.

“Our customers can choose other logistics provider to take freight responsibility” (NL-F).

The uncertainty questions emphasize three aspects, namely: demand for outsourcing purchasing services, the return of value to 3PL providers, and change of customer orders.

*Demand for outsourcing purchasing services*

3PL providers show that the demand for 3PP service should not be dramatically changed, because the users normally place similar amounts of purchase orders. One of interviewees said:

“It could be constant for a long time period. Actually, the demand markets of our clients might not be significantly changed. They could regularly place the amount of purchase orders to us if they are interested in using such new service” (NL-H).

“I think that the demand for purchasing service would not be significantly changed since most of our customers could clearly understand the purchasing volumes for each year” (NL-C).

A few logistics providers have neutral perceptions, and express that offering 3PP service may take some time to be recognized by their customers. One of interviewees stated:

“This is a new concept, people have to believe in it” (NL-A).

One logistics provider points out that the demand curve would quickly increase when the 3PP service starts. The interviewee stated:

“If you look at the demand curve, it takes a long time for starting. When it starts, the demand would increase dramatically” (NL-J).

Return of value to 3PL providers

3PL providers positively show that their competitors focus on different markets, so there are minor over-lapped areas. One of interviewees stated:

“If the competitors could focus on different markets, the demand could be more stable since there are minor overlapped areas” (NL-A).

“We try to maintain specialization in particular industry sectors. That would be cross-served in different industry sectors” (NL-C).

A few logistics providers indicate that the competition for 3PP service would be strong since some logistics giants may enter this market, so the overall profitability would be affected. This is demonstrated by one of the interviewees:

“I think that there might be some competitors in this industry, such as DHL, Mondiale, and Mainfreight. The competition of this market could be more competitive. It could affect the profits when the market becomes mature” (NL-K).

Change of customer orders

Change in New Zealand is not fast, and most customers place small orders each time since they do not want to hold more inventories. One of the interviewees stated:

“Most customers would like to place small orders each time because they do not want to have more inventories. They want to push inventories to the 3PL providers...based on the current economy, nobody wants to start thinking they could order more. All the sizes will be definitely small” (NL-E).

“No, the size of the market would not be changed. The customers always buy for certain slices of the markets. The demand would not be changed significantly in New Zealand based on a certain amount of populations” (NL-J).

In terms of frequency questions, the focus is on three perspectives: frequency of receiving purchasing orders, reduction of fixed cost per transaction, and increase of frequency resulting in having more purchasing power.

*Frequency of receiving purchase orders*

3PL providers positively indicate that they want to get weekly or daily orders since they can have more accurate purchasing demand. One of the interviewees said:

“Consolidating goods weekly allows us to have more accurate purchasing demand, and arrange our inventory space and other facilities in order to meet demand” (NL-H).

“I would expect to receive the customer’s orders daily since the increase in frequency could enhance the efficiency of our assets” (NL-J).

One 3PL provider indicates that the order frequency depends on types of products. The interviewee stated:

“It very much depends on types of products. For the generic products, I think that it could be on a monthly basis. For those fast-moving products, it could be shorter, like computer products. Those products could be daily or weekly” (NL-D).

Another 3PL provider suggests that 3PL customers may want to place monthly orders. The interviewee said:

“Most people tend to them [purchase orders] monthly” (NL-A).

*Reduction of fixed cost per transaction*

The more orders coming makes 3PL providers increase the efficiency of their facilities, and the fixed costs per transaction can be reduced. One of the interviewees described:

“Increase frequency of purchase orders could reduce the fixed cost of 3PL providers since they could be able to increase efficiency of fixed asset. More customers could use purchasing and transportation services together. The inventory turnover could be fast. The fixed costs will be reduced” (NL-E).

“The increased volume could reduce the fixed cost per transaction since the utility of facility is quite efficient” (NL-B).

*Increase of frequency resulting in having more purchasing power*

The increase of frequency can mean a certain amount of order quantity before we place an order to a supplier, so 3PL providers may have more purchasing power to get cheap price. The evidence found from one of the interviewees.

“It could mean a certain amount of order quantity before we place an order to suppliers. It is necessary to negotiate price with suppliers based on the accumulated order quantity.” (NL-I).

“I think that we could consolidate daily or weekly similar orders together so that we could have more power to bid cheaper price” (NL-J).

A few 3PL providers believe that the increased order frequency cannot give them more power to influence the purchasing price. One of the interviewees said:

“It is not about the frequency of purchases because that creates workloads. 3PL providers have to balance up the workload. Otherwise, 3PL providers will mainly deal with the change of orders daily. Frequency of purchasing will not create pressure because it could depend on size and time to run the contract” (NL-E).

One logistics provider has a neutral perception, and indicates that the purchasing power depends on the types of products and industries. The interviewee said:

“It depends on types of products and industries. For food products, the clients might place more orders frequently. If we could aggregate those small orders

together, we might have more power to influence the price. For production lines, it could place one large size order to us at each time” (NL-G).

The questions for transaction size focuses on two aspects: larger transaction size and increase of aggregate orders.

#### Larger transaction size

The transaction size is quite important for 3PL providers. Larger orders can increase 3PL providers’ bargaining power to reduce the purchasing price. One of the interviewees stated:

“...size is very important. Large size could increase our negotiation power to reduce the purchasing price” (NL-A).

“The larger quantity we purchase, the lower costs we expect to get.” (NL-C).

One logistics provider has a neutral perception, and states that the purchasing power depends on its internal costs. The interviewee stated:

“...the main costs for us are building, labour, hired equipment, and IT system. They are the four main costs of our businesses” (NL-K).

#### Increase of aggregate orders

The aggregated orders can increase 3PL provider’s confidence to reduce the purchasing price. Also, 3PL providers can leverage the time for better controlling resources. One the interviewee said:

“...the stable volume could increase our confidence to reduce the purchasing price due to high stable volumes” (NL-B).

“Batch ordering will be preferred. It is to be batched from a resource perspective. It could leverage the time of better controlling resources” (NL-E).

*Value-to-client and benefit-to-provider*

For the questions of value-to-client and benefit-to-provider, 3PL providers positively show that 3PL users do not need to have multiple suppliers offshore, and can receive more certainty and security based on large international logistics companies. Also, 3PL providers are able to get more involved with customers and increase the profits. One of the interviewees said:

“...simplification, they [3PL users] do not need to deal with multiple suppliers offshore. Also, they can get better certainty and security as we are a large international logistics company” (NL-C).

“We can get more involved with customers, which is hard for them to move away from. Also, offering 3PP service can increase our profits” (NL-J).

**5.2.2.5 Findings for NZ 3PL providers**

91\* percent of informants positively indicated that they would not plan to use large funds on recruiting purchasing professionals since those people who had worked at 3PL users' companies had obtained purchasing know-how, and purchasing experts could be recruited from manpower agencies, customer's companies or through the company's official websites, which was not a big deal for them. 9 percent of informants pointed out that continuous investment on human assets is necessary. The informants positively expressed that the current infrastructure was quite good so they did not need to have additional investments. 91 percent of informants positively stated that 3PL providers had built good relationships with their customers since building close relationships could improve their customers' abilities to better understand such new service. This suggests that most 3PL providers show that it is not necessary to invest large amounts in non-deployable assets such as purchasing professionals and additional investments on the current infrastructure and on building close relationships with customers, which strongly disconfirms that larger asset specificity results in not offering 3PP service by 3PL providers, supporting the result in the quantitative study.

---

\* All numbers are rounded.

The uncertainty questions focus on three perspectives: demand for outsourcing purchasing services, the return of value to 3PL providers, and change of customer orders. 73 percent of informants positively indicated that the demand for outsourcing purchasing service could be constant for a long time period. Actually, the markets for their clients might not be significantly changed. The customers could regularly place the stable amount of purchase orders to 3PL providers. 18 percent of informants had neutral perceptions (e.g. this is a new concept, people have to believe in it.). 9 percent of informants signified that offering 3PP service might take a long time to take hold, and the demand could dramatically increase when it started. 73 percent of informants positively disclosed that there were quite a few competitors that could enter into this market since it was very specialized, and the competitors would focus on different specialties, and the demand could be more stable because there were minor overlapped areas. 27 percent of informants expressed that when some large logistics companies include this service, other small logistics players could follow. Then, the overall market profits would be reduced. All informants positively believed that the market change would not be very fast in New Zealand based on the small amount of expected population change. This suggests that most informants positively express that the demand for outsourcing purchasing services would be constant, they would be able to keep their own profits, and the change of customer orders would not be very significant, which strongly confirms that low uncertainty results in offering 3PP service by 3PL providers, supporting the finding in the quantitative study.

The questions for frequency focus on three perspectives: frequency of receiving purchase orders, reduction of fixed cost per transaction, and increase of frequency resulting in having more purchasing power. 82 percent of informants positively showed that they expected to receive orders daily or weekly since most customers do not want to hold high inventory. 9 percent of informants had neutral perceptions (e.g. depends on types of products), and 9 percent of informants presented that they tended to receive orders monthly. All informants positively indicated that the frequency of customer orders could be increased. An increased frequency of purchase orders would reduce the fixed costs of 3PL providers by combing purchasing with other logistics functions, such as warehousing and by making more efficient use of limited capacity. 64 percent of informants positively believed that the more frequently the provider receives similar orders, the greater opportunity to get supplier discounts.

27 percent of informants signified that the order frequency might not allow 3PL providers to have large size of purchasing order quantity. 9 percent of informants had neutral perceptions (e.g. depending on types of products and industries). This suggests that most informants positively believe that they expect to receive daily or weekly purchase orders, that the fixed costs for 3PL providers can be reduced, and that frequently receiving purchase orders enables 3PL providers to have more chances to obtain cheap prices, which strongly confirms that the high frequency of using purchasing service leads to offering 3PP service by 3PL providers, supporting the finding in the quantitative study.

In terms of transaction size, there are two aspects: larger transaction size and increase of aggregate orders. 91 percent of informants positively indicated that large size increases 3PL providers' negotiation power to reduce purchasing price. 9 percent of informants had neutral perceptions (e.g. we would scale what we would buy.). All informants positively showed that they were able to create larger size orders no matter whether large or small numbers of orders from the customers. Also, it could leverage the time for better controlling resources. This suggests that most 3PL providers positively express that larger size orders create more purchasing power for them, and believe that they are able to create consolidated orders, which strongly confirms that the larger size of the transaction results in having more bargaining power by 3PL providers, supporting the finding in the quantitative study.

In terms of questions for value-to-client and benefit-to-provider, all respondents positively indicated that 3PL users would receive the benefits of cost savings, accountability of stock management, and no need to have multiple suppliers offshore, and 3PL providers would obtain the benefits of growing market share, locking in their core transport service, and reduction of marginal costs. This suggests that 3PL providers express that providing 3PP service would create more benefits for both parties, which strongly confirms that 3PP service is positively associated with bringing more value to 3PL users and receiving more benefits for 3PL providers, supporting the finding in the quantitative study.

#### **5.2.2.6 Analysis of perceptions for NZ 3PL users**

The questions of asset specificity emphasize on three perspectives: recruitment of purchasing professionals perceived by 3PL users, additional investments for 3PP service perceived by 3PL users, and building close relationships perceived by 3PL users.

##### *Recruitment of purchasing professionals*

3PL users positively indicate that 3PL providers do not need to invest more money on recruiting purchasing experts because they can get the experts from their customer's firms. One of the interviewees said:

“They [3PL providers] recruit purchasing expertise from us, so our administration costs could be reduced” (NU-A).

“I think that our logistics providers may not need to invest more money on this [recruiting purchasing experts] since they choose purchasing experts from talent database” (NU-C).

One 3PL user has a neutral perception, and indicates that the recruiting of purchasing professionals needs to be seen case by case.

“It is hard to know, and really need to see the case by case. If 3PL was doing this, it has specialized purchasing team. If 3PL is willing to move to this service, it likely needs purchasing experts” (NU-F).

##### *Additional investments for 3PP service*

3PL users positively state that 3PL providers do not need to put additional investments on upgrading their current facilities. This evidence can be found in one of the interviewees:

“For their warehousing and other associated equipment, they are pretty well-off. I think that the overall system is working well for this country” (NU-D).

“I do not think that they would need to upgrade their current facilities” (NU-C).

*Building close relationships*

The current relationships with 3PL providers are quite good and 3PL users are able to manage their 3PL providers' performance, and do not expect that 3PL providers need to put in more effort to maintain the current relationships. One of the interviewees said:

“The current relationship would be enough. We could manage its [3PL provider's] performance” (NU-A).

“Most of contracts of 3PL providers are based on two years. We will review the contracts after two years. Initially, we may consider outsourcing non-critical products for purchasing, such as labeling. It would not be necessary to expect that 3PL providers need to put more effort to maintain the current relationships” (NU-B).

One interviewee has a neutral perception, and indicates that building close relationships depends on how critical your product is. The interviewee said:

“It depends on how critical your product is...high value products, yes, it needs relationship. Non-high value products and non-critical products, it does not need such relationship” (NU-F).

The questions for uncertainty focus on three perspectives: namely, demand for outsourcing purchasing service perceived by 3PL users, achieving company's goals, and change of purchase orders.

*Demand for outsourcing purchasing service*

3PL users positively show that the purchasing demand may not move around a lot. One of the interviewee said:

“At the beginning stage, it may not move around a lot” (NU-B).

“If the price is constant, our demand would be stable. We will continue buying the same price since we are still competitive” (NU-D).

A few 3PL users have a neutral perception, stating that the demand for outsourcing purchasing service depends on types of products. One interviewee said:

“It really depends on what it is and depends on what we are trying to outsource. If we are trying to outsource for products we supply, we really come down to each individual product, when forecasting demand. If it is non-critical products, the demand could be constant. If it is high value products, it might depend on future demand. It is hard to say at the current stage” (NU-F).

#### Achieving company's goals

3PL providers can help their customers achieve their goals, such as adding more value for their customers. One of the interviewees said:

“In our industry, we could compete against three major areas, sourcing, making and distributing. 3PL could conduct sourcing and distributing activities for us. But, we could offer the nutrition by ourselves. If 3PL providers could control sourcing materials, that is much a higher priority since it could add more values for us” (NU-C).

“3PL provider could help us reduce unnecessary cost.” (NU-E).

A 3PL user has a neutral perception, and indicates that achieving the company's goals depends on types of products. One interviewee said:

“If the products are consumable and non-critical products, we are not looking for competitive advantages there; just reducing our costs. If it is the products we are selling, such as healthcare products, we might not have competitive advantages because we are reseller or distributor, if we got the same products to go to the same markets, and sourcing from the same place, we do not have any point of difference of competitive advantage to compete over our competitors” (NU-F).

*Change of purchase orders*

The purchase orders are not changed since the overall size of New Zealand market is rather small. One of the interviewees said:

“It [purchase order] may not be changed since the size of New Zealand market is quite small” (NU-B).

“In New Zealand, pharmaceutical industry is quite small” (NU-C).

One 3PL user indicates that the purchase order will increase when the purchasing price is much cheaper. The interviewee said:

“Our orders could be increasing if the purchasing price is much cheaper” (NU-D).

There are three questions for frequency: frequency of placing purchasing orders, monitoring purchasing activities, and enhancing purchasing power by an increase of frequency.

*Frequency of placing purchase orders*

3PL users positively show that they may want to place monthly orders based on ‘just-in-time’ principle. One of the interviewees stated:

“It could be monthly. We will order what we need. It is just-in-time basis. We want to operate lean manufacturing so we need some stock to be available for production” (NU-B).

“We could appropriately do it monthly” (NU-E).

One 3PL user has a neutral perception, and indicates that the frequency of purchasing orders depends on the type of industry.

“It could depend on the type of industry” (NU-D).

Monitoring purchasing activities

3PL users positively indicate that outsourced non-critical products do not require them to increase costs to monitor purchasing activities. This evidence can be found in one of the interviewees.

“Not necessary, because the outsourced purchasing products are not core products, we do not have to monitor the progress of our orders. We focus on ensuring that our operating process could be smooth” (NU-B).

“Consumables are not a part of our core business. We do not need to increase our costs to monitor purchasing activities” (NU-A).

One 3PL user shows that the order frequency is high because they want to share volume. The associated monitoring costs may be high. The interviewee said:

“Probably, our order frequency might be high since we want to share volume...we do not want to build up high inventory if we order quarterly or monthly. Actually, our orders come from Australia every week. It stock out and stock in so that we could keep the same inventory level. Therefore, the cost to monitor purchasing activities could be high in terms of high order frequency” (NU-D).

Enhancing purchasing power by an increase of frequency

The negotiation power of 3PL providers should depend on the size of orders. One of the interviewees described:

“It [purchasing power] depends on the size of orders rather than the frequency of orders” (NU-B).

“The increase of order frequency may not enable 3PL providers to get more purchasing power because 3PL providers are interested in purchasing volumes” (NU-E).

One 3PL user expresses that 3PL providers can know the actual demand for purchasing based on the weekly volumes, and, then, they are able to get good purchasing price from suppliers. The interviewee said:

“3PL provider could know the actual demand for purchasing, and have opportunity to discuss with suppliers to say that I got 30,000 units and want to supply every week from now until the end of the year, so what kind of best price you could give me. They could get strong negotiation power to get best rate” (NU-D).

In terms of transaction size, the two questions include large transaction size perceived and increase of aggregated orders perceived by 3PL users.

#### Large transaction size

3PL users have a concern of consolidating ability performed by 3PL providers since such ability cannot be proven in the current stage. One of the interviewees stated:

“I may have a concern of consolidating the orders across the country by 3PL providers” (NU-A).

“We have to be aware carefully that they become too big ... I may have concern how 3PL providers create consolidated orders together” (NU-E).

One respondent has a neutral perception, and states that the transaction size depends on different variables, such as inventory level. The interviewee said:

“It also needs to depend on how 3PL providers manage their inventories, length of waiting orders from the end customers, and source of the products” (NU-F).

#### Increase of aggregated orders

3PL users cannot be sure whether 3PL providers have competence to aggregate purchase orders. One of the interviewees stated:

“I am not sure whether 3PL providers have ability to aggregate purchase orders” (NU-B).

“I still have a concern of their ability to consolidate purchase orders together. After all, this new service is not implemented in the real business” (NU-C).

#### Value-to-client and benefit-to-provider

Regarding questions for value-to-client and benefit-to-provider, 3PL users believe that they would get purchasing cost reduction, increase of cash flows, and focus on their core businesses. In addition, they state that 3PL providers can get more profit margins, better utilization of their capacity of warehousing and transportation. One of the interviewees said:

“We can receive cost reduction, increase of our cash flows, and are able to focus on our core business” (NU-C).

“3PL providers can get better profit margins, better utilization of their capacity, and attract more customers” (NU-D).

#### **5.2.2.7 Findings for NZ 3PL users**

There are three perspectives for the questions of asset specificity: recruitment of purchasing professionals perceived by 3PL users, additional investments for 3PP service perceived by 3PL users, and building close relationships perceived by 3PL users. 83\* percent of informants positively indicated that 3PL providers might not need to invest more money on recruiting purchasing experts since they could recruit the purchasing professionals from customer’s firms or talent databases. 17 percent of informants had neutral perception (e.g. need to see case by case). All informants positively showed that 3PL providers did not need to upgrade their physical facilities. Most informants positively indicated that the contractual relationships with 3PL providers could meet their requirements, and the overall performance of 3PL providers was quite good. This suggests that 3PL users do not think that 3PL providers have to have large investments on recruiting purchasing professionals,

---

\* All numbers are rounded.

upgrading logistics physical facilities, and improving the relationships, which strongly disconfirms that the usage of 3PP service is positively related to the high investments by 3PL providers, supporting the finding in the quantitative study.

The questions for uncertainty focus on three aspects, namely: demand for outsourcing purchasing service perceived by 3PL users, achieving company's goals, and change of purchase orders. 67 percent of informants positively indicated that the demand for purchasing service would be stable when the price was stable. 33 percent of informants had neutral perception (e.g. depends on types of products). 83 percent of informants positively expressed that 3PP service was good for them to achieve their goals, such as low purchasing price. 17 percent of informants had neutral perception (e.g. depending on whether the products are critical or non-critical.). Most informants positively pointed out the change of purchasing orders would not be significant since the size of New Zealand markets was quite small. An informant believed that the orders would be increasing when the purchasing price was much cheaper. This suggests that 3PL users see that the market demand for 3PP service would be constant, believe that using 3PP service would achieve their business goals, and doubt that the purchase order would be significantly changed, which strongly confirms that the low uncertainty results in use of 3PP service, supporting the finding in the quantitative study.

The questions of frequency have three perspectives: frequency of placing purchase orders, monitoring purchasing activities, and enhancing purchasing power by an increase of frequency. 83 percent of informants positively suggested that monthly orders would be practical since they wanted to order what they needed, and not hold high inventory. 17 percent of informants had a neutral perception (e.g. depends on type of industry). Most informants positively signified that most outsourced products were non-critical, so they did not need to increase their costs to monitor purchasing activities. 83 percent of informants positively presented that the increased frequency could not increase the purchasing power for 3PL providers because they believed that 3PL providers were more interested in purchasing volumes. This suggests that most 3PL users believe that monthly purchase orders is preferable, the large percent of outsourced products is non-critical items, so they do not need to increase their costs to monitor purchasing activities, and the high frequency is not able to create more

purchasing power for 3PL providers, which strongly disconfirms that the high frequency leads to using 3PP service by 3PL users, supporting the finding in the quantitative study.

In terms of questions for transaction size, the two questions involve large transaction size perceived and increase of aggregated orders perceived by 3PL users. 83 percent of informants positively indicated that they were not sure whether 3PL providers could find a balance point during negotiation process in order to reduce purchasing costs. 17 percent of informants had neutral perceptions (e.g. depending on how 3PL providers manage their inventories, length of waiting for orders from the end customers, and source of the products). All informants positively expressed that the competence of 3PL providers to optimize the order size is not testable currently. This suggests that 3PL users still have doubts of ability of 3PL providers to leverage the purchasing power, and have concerns of creating consolidated orders to get cheap purchasing price, which strongly disconfirms that the capability of creating larger transaction size by 3PL providers leads to use of 3PP service by 3PL users, supporting the finding in the quantitative study.

Regarding the questions for value-to-client and benefit-to-provider, all respondents positively indicated that they could receive the benefits of volume aggregation, consolidating delivery, and cost reduction, and 3PL providers could obtain the benefits of integrating their businesses, creating better profit margins, and attracting more customers. This suggests that 3PL users have confidence that using 3PP service helps them obtain more value and 3PL providers would receive more benefits, which strongly confirms that 3PP service is positively related to providing value to 3PL clients, and is positively related to bringing more benefits to 3PL providers, supporting the finding in the quantitative study.

### **5.3 Chapter Conclusion**

This chapter describes the procedures of data analysis, and indicates the findings of the research. The following chapter will primarily discuss the findings of the research to answer the research questions by combining the results from quantitative and qualitative methods.

## **Chapter 6 - Discussion**

This study focuses on 3PP as a value-added service offered by 3PL providers. The researcher wants to examine whether 3PL providers and users want to offer or use this service. Perhaps, most importantly, theoretical logic and empirical evidence are presented to show that 3PL providers perceive that third party purchase as a value-added service is quite important to their businesses although most of them may not offer this service presently. The findings provide valuable insights into the impact of transaction cost analysis on 3PP service for 3PL providers. Also, the researcher examines the 3PP service perceived by 3PL users based on the transaction cost theory. Existing studies have mainly focused on the impact of transaction costs on the basic services (e.g. transportation and warehousing) offered by 3PL providers (Hanna and Malt, 1998; Bienstock and Mentzer, 1999; Maltz, 1993, 1994).

This section will discuss the findings from qualitative and quantitative data. As mentioned earlier, this research combines the quantitative and qualitative methods. The purpose of using qualitative method is to qualitatively triangulate and validate the earlier quantitative findings; qualitative data is used to explain findings generated by quantitative method, and possibly obtain additional insights into the nature and causes of the hypothesized associations. The findings of the two countries (China and New Zealand) will also answer the research questions listed in chapter one, give the explanation of strengths and limitations of offering 3PP service perceived by both parties, indicate how 3PP as a value-added service offered by 3PL providers, present what benefits and values there are for 3PL providers and users through offering or using 3PP service, and reveal the degree of confidence for both parties to implement this new service in the near future.

There are three major subsections: namely, discussion of the findings from China data, discussion of the findings from New Zealand data, and overall discussion based on the combination of the two sets of findings. The first two subsections discuss the findings on the hypotheses, strengths and limitations of 3PP service, possible methods to implement 3PP services, benefits from implementing 3PP service, and the overall perceptions of 3PP services perceived by interview participants.

## 6.1 Discussion of the findings from China data

### 6.1.1 Hypotheses discussion

#### 6.1.1.1 Asset Specificity – China 3PL providers

According to the results of China data analysis, the relationship between asset specificity and 3PP is not significant. This is consistent with Aubert et al. (2006) and Patry et al.'s (1999) findings. Moreover, based on the interview data, there are some in-depth explanations from three perspectives.

##### Recruitment of purchasing professionals

Most participants do not believe that they need to invest large funds into recruiting of purchasing experts. They expressed that

“...we are able to get those qualified people from a head-hunting company”.

“Our company could ask our contracted third-party human resource agency to recruit qualified purchasing experts and offer full training programme for the candidates”.

One manager indicates that the company has offered the purchasing functions to car dealers in the automotive industry, and has recruited some purchasing professionals for their current purchasing activities. In fact, without professional help, the 3PL provider is going to be stuck with obsolete inventories. The manager expresses that:

“It is required for us to recruit some purchasing professionals who are able to choose those products that could be quickly sold to 4S dealers in order to reduce this risk, but the cost of recruiting purchasing professionals may not be high since we could obtain them from the job fairs. Alternatively, we could post the specific job position on our official websites. I believe that we will be able to have qualified purchasing experts”.

Another 3PL manager expresses that the company has a basic mode of sourcing product for its clients. However, the company does not help the clients purchase

products, nor provide delivery. They only check the quality of products purchased by the clients. In the near future, the company would consider including 3PP service.

“We could focus on several industries for trial purposes, such as clothes, stationery, and not-high-tech products. Those buyers could be recruited from the recruitment fair organized by the local government. Alternatively, we could publish our job specification on the professional online recruitment agency websites, like 51job.com.”

One participant points out that a logistics company needs to recruit some purchasing professionals, but the training time might be different based on personal specialized knowledge and experience. Also, purchasing some special products might need an acquainted and experienced buyer.

“All those training processes could be outsourced to the professional human resource agency. The agency would follow the requirements of purchasing for certain types of products for training. I believe that such qualified candidates would be potentially plentiful so I do not think that we need to invest a huge amount of money on cultivating those people.”

#### *Additional investments for 3PP service*

Most respondents indicate that it is not necessary for them to invest large funds in the physical facilities in order to offer 3PP service. The current assets can meet the requirements of offering 3PP service.

“I don’t think that we have to invest large funds in upgrading logistics technology, warehousing, and equipment since we already have those assets.”

“3PP is a value-added service. Most of our current assets can meet the requirements of offering 3PP services.”

One manager from a global logistics company believes that the company has advanced logistics technology, cross-national warehousing facilities, and excellent multiple transport fleets.

“As a global logistics company, we do not have to invest more assets on 3PP service. We have obtained advanced logistics technology, multi-national warehouses, and other relevant equipment.”

Some respondents from the state-owned logistics companies express the same ideas regarding the additional investments for 3PP service. As national logistics companies, they have high confidence that the companies have adequate physical facilities in order to meet the growing demand of purchasing.

“I do not think that our company needs to invest substantial capital in upgrading the systems and improving the physical infrastructure for offering 3PP service...we can simply add the purchasing function on our existing systems. It would not cost too much for us.”

#### *Building close relationships with clients*

The majority of respondents disclose that the 3PL providers have established good relationships with their clients.

“It is not necessary to put in more effort to maintain close relationships with the clients ... offering third party purchase service is a good pathway that keeps close relationships with the clients.”

“The relationships between 3PL users and us are very close since we offer reliable and high quality services to them.”

3PL providers have the capability of understanding the purchasing needs from their clients. Especially, the large 3PL providers would have stable credibility and be highly recognized in the industry.

“I do not think that our company needs to invest more labour and money on maintaining good relationships. We are able to comprehensively understand client’s purchasing needs. For the potential customers, we may need to build good relationships with them in order to better understand their purchasing structures. As we are a big logistics company, our reputation and credibility have been recognized in this industry.”

One respondent indicates that the company has built partnerships with its 3PL users. Additional investments on improving the relationships with 3PL users are not necessary. The 3PL provider may need to introduce the purchasing service as a whole package of services to the 3PL users:

“Most of our clients have established partnerships with us, so we do not need to invest more money to establish our sales networks. We only need to have a plan to promote such new service to our existing clients. We could combine some current services to add this new service as a whole pack of services.”

Another respondent indicates that the logistics company has built a high level of trust with their customers. The logistics company only needs to focus on promoting this new service to its clients.

“We have built the high level of trust with our customers, so we only need to promote 3PP service to them.”

### Summary

The hypothesis H1a is not supported by the findings of the survey. 3PL providers do not believe that they need to put large investments into recruiting and cultivating purchasing professionals since most purchasing experts can be obtained from the job market, human resource pool, or other relevant channel. These are not non-deployable assets. More investments on improving and upgrading hardware and software facilities would not be necessary since their current infrastructure can meet the purchasing needs of 3PL users. In particular, the large 3PL providers, who gain advantages of national networks, strong facilities, advanced technology, and sufficient financing competence, have high credibility and are comprehensively recognized in the logistics industry. In terms of building relationships with 3PL clients, 3PL providers believe that they have close relationships with 3PL users, and even, a few 3PL providers have built partnerships with their clients. Continuously offering new service would help both parties' relationships. Also, 3PL providers are able to understand requirements of customers' normal routines, such as the types and

volumes of purchased products. 3PL providers should focus on introducing and promoting 3PP service to 3PL users.

Some interesting points may not be explained by the model. First, the ability of purchasing experts; they need to possess two types of competence: 1) the purchasing experts will need to meet different customers' requirements, in particular, customized purchase products, and 2) they have to understand the performance of suppliers, including lead time, capacity, selling price, quality and so forth.

Second, response to customer's needs. For instance, although the method of quick response is costly, it can improve the relationships between the logistics providers and customers. However, 3PL providers have a concern as to how to transfer information (communication) between two parties. Some 3PL users may have good experience forecasting purchasing demand but this information may not be able to reach 3PL providers immediately. Consequently, 3PL providers may not easily understand the real needs and the users' specific purchasing requirements, which is another key important aspect in maintaining good relationships between the two parties.

#### **6.1.1.2 Uncertainty – China 3PL providers**

Uncertainty has a significant influence on 3PP, which is consistent with Reeves et al.'s (2010) and Bienstock and Mentzer's (1999) findings. There are some explanations from three perspectives in terms of interview data.

##### *Demand for outsourcing purchasing services*

Most respondents indicate that demand for outsourcing purchasing service is more stable for a long-term period. Third party purchase is one of the primary trends for 3PL providers; 3PP should have large potential markets.

“I believe that the demand of outsourcing purchasing service could be more stable for a long-term period.”

“The general trends of outsourcing purchasing services could constantly increase in a long-term.”

One respondent states that the logistics company offers a service of collection of ‘trade charges’ on behalf of customers, and this relationship is an excellent platform from which to move to 3PP. The company could aggregate those small orders from the customers when collecting the trade charges. On the one hand, it is an effective way to understand the market demand. On the other hand, the company uses its bargaining power to bid a cheap purchasing price on behalf of its customers. For transportation cost, most customers pay the delivery fees to the 3PL provider already.

“Based on my historical sales experience, the demand for outsourcing purchasing service would be rather constant for a long time.”

3PP service will become one of the hot topics in the future. Most 3PL users will understand the function of this service, and may use this service when they can see the real savings incurred.

“When the market could stand up at the mature stage, the demand for outsourcing purchasing service would be constant for a long time.”

One respondent indicates that the demand for 3PP service is relatively stable because most 3PL users are able to understand production planning and they, normally, place similar orders based on the relatively stable volume of production and demand.

“I do not believe that demand for 3PL users would have a significant change for a certain period.”

#### *Return of value to 3PL providers*

Most large 3PL providers have strong financial competence and global logistics networks, so those small- and medium-sized logistics providers find it difficult to enter into the markets for offering international sourcing service.

“As a large logistics company, we do believe that we have intensive international and national networks and strong financial abilities, which other competitors may not have.”

When large logistics providers enter into this market, the overall competition will become more competitive at that time. One respondent believes that its company has obtained first-mover advantages and has a capability of keeping return of value.

“We have obtained first-mover advantages ... we understand our clients’ requirements and could be able to have ability of price making. We believe that we could be able to maintain sustained competitive position and sustainably get expected return of value.”

Other competitors may be interested in offering such new service in different industries. Focusing on different market segments would help 3PL providers maintain their return of value.

“Some 3PL providers may be only interested in certain products since they cannot provide a full range of products for third party purchase.”

“Every 3PL provider might focus on their own special industry.”

The current logistics markets are very competitive. Most 3PL providers only pursue low costs. Competing on price is an obvious and main method to maintain their minimum market share. In fact, the logistics profit margin is not very large. It is reasonable for 3PL providers to offer value-added services in order to increase the sources of profits. If there is large demand for 3PP services, many logistics companies would quickly offer this service. In which case, those who do not want to compete on price will need to offer differentiated services.

“Due to differentiated services for 3PL providers, we might have rights to choose our suitable industries for sourcing to keep our return of value.”

#### *Change of customer orders*

Most 3PL users understand the volume of products outsourced to 3PL providers, so 3PL providers can receive stable orders and the demand for purchasing service would not fluctuate significantly.

“Normally, the sales of the users might not be largely changed year by year. It could constantly increase based on an increase of market demand.”

“...demand for purchasing services is stable”

For the international markets, one respondent indicates that the overall trends of customer's orders would be more stable since the customers are able to estimate reliable purchasing volumes per year.

“For international markets, I think that the market is more stable since most international companies can give more reliable purchasing volume for every year.”

### Summary

The hypothesis H2a is supported by the findings of the survey. Most 3PL providers believe that the demand for outsourcing purchasing service is not significantly changed since 3PL users clearly understand the type and volume of products outsourced to 3PL providers. Based on the predicted purchasing demand, the 3PL providers are able to measure their performance in offering 3PP service. Large 3PL providers, who have strong financial ability and a worldwide logistics network, are able to maintain their profit return. Due to differentiated service and the features of different regions, different 3PL providers focus on different industries in various regions, so they are also able to maintain good value return in different market segments. The overall trends of customers' orders would be stable since their sales volumes would not be significantly changed annually.

Some interesting points may not be included in the model. The world economic status and financial environment are two variables to influence market demand, such as the financial crisis that occurred in 2008. Due to weakened market demand, 3PL users may reduce the purchasing orders and conduct purchasing activities by themselves. In addition, due to having limited resources, the increase of specialization requires the logistics provider to be an 'expert' in a particular industry, such as healthcare logistics. The use of such service in the particular industry may steadily increase.

### **6.1.1.3 Frequency – China 3PL providers**

The relationship between frequency and 3PP is significant. This is consistent with Hanna and Maltz's (1998) findings. According to the interview data, there are some explanations divided by three aspects.

#### *Frequency of receiving purchase orders*

Most 3PL providers expect to receive weekly orders so that they are able to enhance their forecasting accuracy.

“I believe that our clients could be able to place orders daily because it is easier to control and forecast orders.”

A respondent signifies that the company expects to receive weekly orders since it is easy for the company to plan purchasing volume.

“... weekly orders would help us to have more accurate purchasing plan”

3PL providers are also able to control transportation capacity and inventory level through receiving weekly orders.

“... easy to control our transportation capacity and inventory levels...”

One participant thinks that the order frequency should be analysed from two perspectives. One is from the 3PL perspective. The participant believes that the company has ability to receive daily orders, and quickly sort and consolidate those orders.

“...we are able to receive daily orders and quickly consolidate those orders”

Another is from the user perspective. 3PL providers would not be able to control this circumstance since each individual user may have different periods for outsourcing purchasing.

“...we cannot control the circumstances of 3PL users since they have their own purchasing periods”

One participant indicates that consumables orders are expected to be received daily, and industrial product orders are expected to be received weekly.

“...consumables might be ordered day by day. Industrial products might be ordered weekly.”

*Reduction of fixed cost per transaction*

The majority of respondents indicate that frequently receiving purchasing orders can reduce fixed cost per transaction.

“To consolidate each small order from the customers can reduce the fixed costs per transaction because it increases the efficiency of using fixed-assets.”

The demand for each individual client is very limited, so the order frequency for every single firm would not be very high and its order quantity is low. Aggregating orders together can reduce fixed cost for 3PL providers.

“Consolidating every small order quantity together could possibly reduce the fixed cost per transaction for our company.”

3PL users may face the issue of financial constraints, so using 3PP service may help them reduce their administration costs and purchasing costs.

“In order to solve the issues of financing constraints, our [3PL] customers may increase their purchasing frequency.”

A respondent suggests that the order frequency depends on how quickly completed orders can be consolidated. It is quite important for 3PL providers to reduce fixed cost per transaction with having large numbers of completed orders.

“The higher the order fulfilled rate, the less fixed costs incurred.”

*Increasing frequency resulting in having more negotiation power*

The majority of respondents indicate that an increase of frequency can achieve the economies of scale. When 3PL providers get more similar orders, they could have more power to get reasonable price.

“I believe that an increase of frequency raises the economies of scale of gathering more similar products to exert more purchasing power.”

“An increase of frequency enables 3PL providers to aggregate more orders and have more purchasing power to bid a cheap price. The increase of frequency means that the purchasing volume should go up.”

Based on the stable purchasing volume, 3PL providers have more confidence to bid a good price and increase their flexibility.

“We are also able to increase our flexibility for bidding.”

If 3PL providers are able to reduce purchasing costs on behalf of 3PL users, for instance, cost reduction between 10 and 15 percent, it is highly likely for 3PL providers to obtain more purchase orders.

“3PL provider, who has more volumes of purchase orders, can have more bargaining power to reduce buying price for its clients.”

One respondent expresses that the ability to integrate similar orders in a short period is crucial, since 3PL providers have to quickly sort and integrate similar orders.

“Receiving more purchase orders in a certain period would increase the bargaining power of our company.”

*Summary*

The hypothesis H3a is supported by the findings of the survey data. 3PL providers expect to receive weekly orders since they are able to forecast a more accurate purchasing plan and to understand customers' purchasing volume. Consolidating

similar orders helps 3PL providers reduce the fixed cost per transaction and the efficiency of the assets can be enhanced. The more frequently receiving similar purchasing orders, the more 3PL providers have bargaining power to get cheap price.

Some interesting points are not included in the model. The factor of customer's purchase cycle period is a key variable to influence purchase frequency since some customers may prefer to place daily orders. The routine behaviour of 3PL users is another crucial factor to affect the order frequency. For instance, if 3PL users use logistics service weekly, it is highly likely for 3PL users to outsource their purchasing service weekly. Based on the stable market demand, their routine behaviours could be constant.

In addition, the factor of order fulfilled rate should be considered by 3PL providers. The higher number of completed orders enables them to minimize the fixed cost per transaction.

#### **6.1.1.4 Transaction size – China 3PL providers**

Transaction size and 3PP have a significant relationship based on the findings of the survey, which is consistent with Verwaal and Donkers's (2003) findings. Some explanations can be found in the interview data.

##### *Large transaction size*

Most respondents believe that larger transaction size enables 3PL providers to have more purchasing power to influence and dominate the negotiation process with suppliers.

“...larger transaction size may allow us to have a big power to negotiate a cheap price and reduce purchasing costs.”

“The more orders we received from our customers, the more negotiation power we had to chop off the purchasing price.”

In terms of large purchasing volume, 3PL providers believe that the associated costs, such as bargaining cost, searching costs, and decision costs, are reduced.

“...the associated transaction costs can be minimised.”

3PL providers play as price makers rather than price takers. The primary aim for 3PP service is to increase transaction size in order to get cheap price.

“We play as price maker rather than price taker.”

“...have powerful rights to dominate the purchasing price”

One respondent indicates that the large transaction size helps 3PL providers to get more bank loans to deal with the financial concerns. The strong financial ability of 3PL providers can attract more 3PL users to use 3PP service.

“...larger transaction size gets more bank loans/credits to solve the financing issues.”

#### *An increase of aggregated orders*

Most 3PL providers present that an aggregated order enables 3PL providers to highly influence on purchasing price, and increase their flexibility to meet uncertain market demand. 3PL providers are able to accurately forecast future demand, and plan the right purchasing plan on behalf of 3PL users.

“An aggregated order could increase flexibility of 3PL users to meet uncertain market demand.”

A respondent indicates that suppliers are willing to see that 3PL providers have more purchasing volume because they can receive more profits from such large orders.

“...an increase of aggregated orders makes our company have more purchasing volume.”

Aggregated orders can generate more confidence for 3PL providers to use group purchasing power to negotiate with suppliers.

“Large aggregated purchasing volume enables us to have high confidence to negotiate purchasing price with suppliers.”

3PL providers are willing to receive more aggregated orders and be in a position to be price makers.

“Our company prefers to receive more aggregated orders so that we can have own rights to make decisions without external effects”

One respondent expresses that the speed of consolidating buyer’s orders is a key variable to achieve the goal of increasing purchasing volume. 3PL providers have more purchasing power through quickly consolidating purchasing orders.

“Speed is money... we have to quickly consolidate small orders, and get a clear idea regarding the purchasing volume for each type of product, and then we can place one large size order to suppliers and increase our bargaining power with suppliers.”

“...ability to integrate small and similar orders quickly is a significant advantage in bargaining with suppliers”

### Summary

The hypothesis H4a is supported by the findings of the survey data. 3PL providers believe that large transaction sizes give them more power to influence purchase price. They want to become “price maker” rather than “price taker”. Also, 3PL providers are able to solve unpredicted issues through obtaining large transaction size, such as obtaining a loan from a bank to cope with their financial constraints. Using aggregated orders increases the possibilities of negotiating cheap purchasing price by 3PL providers. Quickly consolidating small and similar orders can increase the flexibility of 3PL providers to meet uncertain market demand.

There are some interesting points that are not covered in the model. The size of customer's orders may depend on the stability of client's business and the size of its business. Sustained orders are major concerns for 3PL providers since it is difficult for them to steadily grow without receiving sustained orders. Compared to SMEs, some small logistics company may still maintain good relationships with large firms since collaborating with large firms affects the percent of market share. A start-up logistics provider has to focus on the percent of market share. Cooperating with a large firm may increase its reputation and increase its market share, so additional benefits to cooperate with large firms may have other benefits from different perspectives.

#### **6.1.1.5 Value-to-client and benefit-to-provider– China 3PL providers**

The relationships between 3PP and value-to-client, and 3PP and benefit-to-provider are all significant. 3PL providers believe that 3PP service could be positively associated with value-to-client and benefit to themselves. Some explanations can be found in the interview data.

##### *Value-to-client*

3PL providers point out that 3PL users are able to focus on their core competency and the purchasing costs can be reduced. The costs have two components: one is direct costs, such as purchasing costs, and another is indirect costs, such as appraisal costs of measuring suppliers' performance.

“...offering 3PP service helps them [3PL users] improve their core competence and those indirect costs can be reduced”

“The primary benefits for our customers include lower purchasing price, and reducing unnecessary purchasing costs.”

The purchasing risk can be reduced since 3PL providers are able to share purchasing risk with their customers

“Purchasing risk can be shared with us.”

3PL providers are able to offer consistent information technology that allows customers to use the same technology platform.

“We are able to offer the consistent technology platform for our customers.”

3PL users would not have their own purchasing team so their internal human resource costs can be reduced. The global and domestic sourcing by 3PL providers would help them minimize concerns about purchasing and logistics costs. The activities of quality check and order processing can be outsourced to 3PL providers.

“...they [3PL users] do not have purchasing team...they do not have concerns of high logistics and purchasing costs for domestic and international sourcing”

“...the activities of quality check and order process can be passed on to us [3PL providers]”

The financial flows for 3PL users can be smoother since they do not need to borrow huge money for purchasing materials.

“Our company has strong financial competence and enable them [3PL users] to pay the service by instalment.”

#### *Benefit to 3PL provider*

3PL providers believe that offering 3PP service can increase revenue and maintain their competitive market positions in the field of logistics.

“This value-added service [3PP service] can increase profits for us and enables us to keep our competitive advantages in the logistics market.”

3PL providers can keep customer’s loyalty, expand their current businesses, and increase profits.

“Our company can maintain customer’s loyalty, extend our current logistics service, and increase profits”

One respondent points out that 3PL providers can efficiently utilize the capacity of transportation and warehousing through offering 3PP service.

“...increase the capacity utilization of transportation and warehousing”

Offering 3PP service helps the 3PL provider to enhance its reputation, so they could keep the customers for a long-term.

“...help our company enhance our reputation in the logistics industry”

The 3PP service helps 3PL providers increase the volume of capital turnover and easily borrow capital from banks based on the high capital turnover.

“Initially, we might receive profits only from logistics perspectives. It might be only five percentages of total logistics costs from 3PL users. If the 3PL provider includes 3PP service, it helps 3PL providers increase profits from five percentages to six percentages of total costs. From an accounting

perspective, the annual turnover of 3PL providers significantly changes. Most banks are more interested and attracted by those companies who can show a healthy increase in turnover. It is thereby easy for 3PL providers to borrow money from the banks.”

3PL providers are able to receive additional service fees for offering financial services to 3PL users.

“We receive additional service fees for such service [offering financial services to 3PL users].”

3PP services help 3PL providers to exploit a new business growth area and the providers are able to improve their profitability.

“We can get one additional business growth area and maximise our profits.”

### Summary

The hypotheses of H5a and H6a are supported by the findings of survey data. 3PL providers perceive that they intend to help their customers focus on their core business and minimise purchasing risks. They can help those firms who want to enter into Chinese markets to have their own distribution networks. Offering the same information exchange platform would help their customers reduce transaction costs. In addition, human resource costs, negotiation costs, decision costs and other related costs can be reduced for 3PL users.

3PL providers themselves are able to maintain good relationships with their 3PL customers and improve customer loyalty through offering 3PP service. 3PP service as a value-added service enables them to have an additional business growth area since it is a good opportunity to pursue the profit maximization. Good performance of capital

turnover helps 3PL providers to get more money from the bank in order to develop other new business areas.

#### **6.1.1.6 Asset Specificity – China 3PL users**

Based on the outcome of China data analysis, the relationship between asset specificity and 3PP is not significant. This is consistent with Nam et al.'s findings (1996). There are some explanations from the interview data.

##### *Recruitment of purchasing professionals*

Most 3PL users believe that their 3PL providers do not need to invest a lot of capital in recruiting purchasing professionals since most purchasing experts can be obtained from job markets.

“3PP service should be focused on non-high-technology products, so 3PL providers obtain them [purchasing professionals] from job markets.”

A respondent indicates that the company does international business. When 3PL providers help the company conduct global sourcing, the company expects 3PL providers to have some experts who are familiar with trading clauses and contracting with international partners. Based on their past experience of freight forwarding, 3PL providers have a lot of opportunities to contact local suppliers. By recruiting professional buyers, it is easy for the providers to introduce this new service to 3PL users.

“Our 3PL providers have offered international freight forward service for a long time, but offering international sourcing may require them to obtain some purchasing experts... those people [purchasing experts] can be obtained from markets based on requirements of the job.”

3PL providers may lack past purchasing experience since it is a brand new service for them. They may recruit the qualified purchasing experts from their official websites based on their requirements.

“Our logistics provider is a global logistics company. I do not think that it offers the purchasing service so there is no past experience for the logistics company... the purchasing professionals can be recruited from its official websites. Based on its high global reputation, the logistics company can easily find the suitable purchasing experts.”

There are many people with purchasing talent who can meet logistics providers' requirements. Professional headhunting companies hold a lot of information for qualified purchasing experts. The headhunting companies can select good candidates for consideration by 3PL providers.

“Most headhunting companies can recommend suitable candidates for 3PL providers, so they can save more costs and time for searching for good purchasing professionals.”

*Additional investments for 3PP services*

3PL users state that putting additional investments on improvement of current infrastructure by 3PL providers is not necessary, such as building a new warehouse.

“There is no need to build up a new warehouse.”

“I do not think that the investment for warehousing is necessary for them [3PL providers].”

The 3PL providers' infrastructure can meet the requirements of offering 3PP service so there is no need to invest additional capital to upgrade the current facilities.

“...the 3PL provider does not need to invest huge funds in the current logistics facilities and I think that its capacity of transportation and warehousing is sufficient to meet our demand.”

A respondent suggests that the 3PL provider may upgrade its current technology so that the integration of purchasing and logistics technology would make it easily for 3PL users to track and trace the whole process of their orders from purchasing to

delivery. However, such upgrading would not cost too much money because it only needs to achieve the purchasing function.

“...such improvement [purchasing technology] does not take a lot of money.”

“...adding additional function [purchasing technology] would not cost too much for them [3PL providers]

Combining technology platform and customer relationship platform is an important step for successfully implementing 3PP service. When customers are able to effectively and efficiently exchange the details of purchase orders with 3PL providers, it is reasonable to expect 3PL users to continuously use such new service.

“...incorporating the platforms of technology and customer relationships can successfully implement 3PP services. Of course, this is not high costs for them.”

#### *Building close relationships*

A respondent indicates that production is not core business (fashion clothing design is its core business), so the logistics provider can help the company transport and store products. When 3PL providers offer the purchasing function via using group purchasing power, the company can reduce the costs of purchasing raw materials and gain better profit margins.

“Not necessary, we have established contractual relationships with our 3PL providers... the current contractual relationships with them [3PL providers] can meet our daily business requirements.”

3PL users have maintained a stable relationship with 3PL providers since providers help their customer ensure the quality of products to meet customers' standards and deliver the products at the right time.

“Our relationship with 3PL providers is very stable...3PL providers are able to fulfil our orders.”

3PL providers can understand 3PL users' delivery volume and types of products based on the good relationships between both parties. 3PL users only need to let 3PL providers know the order quantity and types for purchasing.

“...exchanging information between both parties [3PL users and providers] enables 3PL providers to understand our working procedure, purchasing demand and quickly respond to our needs without additional investments.”

A respondent indicates that the company has built up a partnership with its 3PL provider. For those generic products, the company has confidence to use 3PP service.

“For generic products, we have confidence that outsourcing those non-critical activities to 3PL providers can save our operational costs ... they do not need to invest additional capital to improve our relationship.”

Building close relationships needs to bring more benefits and values for both parties and having good relationships can keep orders stable as well. 3PL users can evaluate and manage the performance of 3PL providers. Thereby, the relationship between each party is more reliable and stable.

“Our 3PL providers can meet our objectives and deliver the orders at the right time in the right place.”

### Summary

The hypothesis H1b is not supported by the findings of survey data. Recruiting purchasing experts is not a big issue for 3PL providers since many suitable and qualified purchasing experts can be obtained from manpower agents, job markets, and human resource databases. Most 3PL users do not think that 3PL providers need to put additional investment into upgrading the current physical infrastructure. Although some customers expect to integrate the purchasing function into the current logistics systems, 3PL providers do not need to spend a lot on such improvement. Many 3PL users express that the current relationships with 3PL providers are stable and reliable. 3PL providers are able to understand their daily purchasing demand and routine procedure based on exchanging information between each other. 3PL providers do not

need to put more effort into improving the current relationships with their customers; most of them already want to outsource the non-critical items to 3PL providers. Effectively using 3PP service is to achieve the goal of cost reduction for 3PL users.

#### **6.1.1.7 Uncertainty – China 3PL users**

The relationship between uncertainty and 3PP is significant. This is consistent with Reeves et al.'s (2010) and Bienstock and Mentzer's (1999) findings. There are some explanations from the interview data.

##### *Demand for outsourcing purchasing service*

Most respondents indicate that the demand for outsourcing purchasing service would not be significantly changed.

“I do not think that the demand for purchasing is dramatically changed.”

A respondent indicates that the core business for the company is to provide property and supply chain solutions for their clients; the company needs 3PL providers to deliver construction materials.

“For our business, it [demand for purchasing] is not changed often.”

One respondent shows that the consumable products may not change since the company is able to get more accurate figures for spending on consumable materials and products.

“I think that the consumable materials and products are not significantly changed.”

One respondent indicates that the major types of products, such as maintenance materials, are not dramatically changed. The company clearly understands what it is going to outsource to 3PL providers.

“Our main types of products, like maintenance materials, should not be changed because we know exactly what we are going to outsource.”

*Achieving company's goals*

Effectively using 3PP service can help 3PL users meet their business goals, such as achieving cheap purchasing price. A respondent indicates that the core business for the company is to design and promote its products. The role of production is not a critical part of its business. However, the company needs to be sure that the quality of products meets its normal standard. Additional services, such as material procurement, can be outsourced to 3PL providers. From the perspective of quality assurance, 3PL providers may help check whether the quality of purchased materials can meet customer standards.

“...it can achieve our goal of achieving cheap price.”

“3PL providers can help us achieve our initial target, such as cost reduction.”

Outsourcing non-critical items to 3PL providers would not affect achieving their business goals because 3PL users are able to focus on their core business.

“...could not affect our business since we focus on the service level to satisfy the customer's demand...those generic products are not our core business, so it cannot affect our objectives.”

“We may not outsource the strategic products to 3PL providers and our logistics providers can help us reduce operational costs, such as purchasing. From this point, it helps our company to achieve the goal of cost reduction.”

The consumable products are not core business for a 3PL user. The main objective for the company is to minimize the costs for non-critical materials and products. Also, it reduces the pressure for 3PL user’s warehousing.

“For consumable products, we aim at cost reduction. I think that 3PL providers offer lowest price for us and relieve our pressure to hold high inventory of non-critical items in our warehouse.”

3PL providers need to offer loyalty programmes to serve the customers since more customers want to work with those logistics providers. 3PL users believe that they are able to receive benefits and achieve their goals by using purchasing services offered by those logistics providers.

“It is possible to achieve the goals by using purchasing services offered by 3PL providers... the loyalty programmes offered by 3PL providers can sustainably promote 3PP service.”

#### *Change of purchase orders*

The majority of respondents express that the purchase orders are not significantly changed.

“The purchase order is not changed.”

3PL user may place similar and small orders for each time since they want to transfer the risk to 3PL providers, such as using vendor management inventory (VMI) method. The size of purchase orders is not significantly changed.

“... the size of orders is not changed... we may place small similar orders for each time as we are able to easily manage our inventory levels”

The consumable products are not significantly changed since 3PL users can predict the accurate numbers of non-critical materials and products.

“Consumable products are not significantly changed...our company is able to understand the purchasing volumes for non-critical materials and products.”

A 3PL user may need to have more communications with the logistics provider when the user intends to initiate more purchase orders. The purchase order may not fluctuate at the beginning stage of 3PP use; or it may reduce while the user gains experience of the new arrangement. In any case, purchase order activity tends to be relatively constant, to wit:

“We have contractual relationships with the logistics provider. The current arrangement is only based on basic requirements, such as transportation, tracking and tracing, etc. With a new value-added service, we would not outsource large amounts of purchasing to the logistics provider. Placing small orders helps us examine the market response regarding this new service.”

Summary

The hypothesis H2b is supported by the findings of the survey data. The demand for outsourcing the purchasing function is not significantly changed since 3PL users would not readily change their annual purchasing plan and cycle time for sales. For maintenance, repair, and operations (MRO) products, 3PL users know the overall percent of products outsourced to the logistics providers. Outsourcing non-critical items to 3PL providers can achieve the goal of purchasing cost reduction and meet 3PL users' service requirements. The purchase orders are constant or the users may shift purchasing risk to 3PL providers by placing small and similar orders each time at the beginning stage.

Some interesting points are not included in the model. The market demand may depend on the nature of business and seasonal factors (peaked or off-peak demand). For instance, a company may face a peak time during summer and autumn.

Changes in purchasing orders by 3PL users would depend on the performance of 3PL providers. Successful implementation of 3PP service by 3PL providers may affect the customer orders positively; unsuccessful implementation would, of course, have the opposite effect.

**6.1.1.8 Frequency – China 3PL users**

The relationship between frequency and 3PP is not significant. This is consistent with Anderson and Schmittlein's (1984) findings. Explanations can be found in the interview data.

Frequency of placing purchase orders

The respondents indicate that they consider placing monthly orders since they need some stocks to meet uncertain market demand.

“We could place a monthly or quarterly order.”

3PL users may transfer stocks to 3PL providers, and they think that 3PL providers may not expect to receive daily orders due to increase of transaction costs.

“Monthly orders could be more practical since 3PL providers may not want to receive a lot of daily orders due to large operation and transaction costs.”

There are two factors to influence the frequency of using 3PP service: namely, cycle time of transportation and inventory, and cycle time of sales and production. Trying to balance two factors simultaneously can increase the frequency of purchasing orders.

“Our orders could be monthly...I think that there are two determinants to affect the transaction frequency. One is cycle time for transportation and inventory, and another is cycle time of sales and production.”

For the consumable products, 3PL users may place monthly orders. A respondent indicates the company normally reports their monthly budgets, so the purchasing orders are based on the monthly budget report.

“Our department plans the monthly budget report...our purchasing orders should be based on the budget plan.”

#### Monitoring purchasing activities

3PL users do not increase the cost to monitor purchasing activities because the frequency of placing orders is monthly.

“I think that the cost to evaluate the purchasing activities does not increase since we only place monthly orders.”

A respondent indicates that the company has not built a high level of trust with its 3PL provider. The cost to monitor purchasing activities is not increased because the frequency of purchase orders is not high.

“We may not frequently place orders since we cannot see the actual performance of the 3PL provider.”

3PL users have built a long-term relationship with 3PL providers and believe that their logistics providers can transport right products at the right time in the right place,

so it does not require 3PL users to incur a lot of costs to monitor the purchasing activities.

“We have established a long-term relationship with 3PL provider and its overall performance can meet our requirements... we do not increase costs to monitor the purchasing activities performed by 3PL providers.”

3PL users are more interested in the final purchase price rather than the processes of purchasing activities. It is not necessary for them to increase costs to monitor the purchasing activities.

“We are interested in the purchasing price rather than the whole progress of purchasing activities performed by 3PL providers... we do not need to put additional costs to monitor the purchasing processes.”

Outsourced products to 3PL provider are non-critical items. 3PL users may not need to spend additional costs to track the purchasing activities conducted by 3PL providers.

“...we do not need to increase costs to monitor purchasing activities since most outsourced products to our logistics providers are not core products.”

Consumable products are non-critical items for 3PL users, so it is not necessary for 3PL users to raise the costs to evaluate the purchasing performance.

“...we may outsource consumable products to 3PL providers because those products are not our critical products. We do not need to raise costs for appraisal of purchasing performance.”

#### Enhancing purchasing power by an increase of frequency

Most 3PL users state that an increase of frequency may not result in raising purchasing power for 3PL providers.

“The level of frequency cannot affect the purchasing volume by 3PL providers.”

An increase of frequency may not enhance the purchasing power conducted by 3PL providers because a 3PL user believes that the bargaining power is related to the size of orders.

“No, it should depend on the order size rather than frequency.”

Although the frequency of placing orders is high at the beginning stage, 3PL users may not receive the benefits promised by 3PL providers after using 3PP service, such as cheap purchasing price. The aggregating ability of 3PL providers would not be high.

“We have a concern of receiving the benefits after using 3PP service... if we may not see the real benefits by using this service, I do not think that other customers may frequently place purchase orders to 3PL providers, and they cannot have more bargaining power to influence the price.”

A respondent suggests that most 3PL providers may be interested in the purchasing volumes rather than order frequency because large purchasing volume could give more bargaining power to 3PL providers.

“... I think that our logistics provider would prefer to see the large purchasing volume rather than order frequency.”

### Summary

The hypothesis H3b is not supported by the findings of the survey data. Most of respondents prefer to place monthly orders to 3PL providers because they need some stocks to meet uncertain market demand. They also indicate that there is no need to put more funds to monitor purchasing activities since the outsourced products are non-critical. Moreover, some 3PL users have partnerships with 3PL providers, so the logistics providers have more credibility to offer 3PP services without additional safeguard costs. The majority of respondents believe that an increase of order

frequency cannot increase purchasing power. Most 3PL providers are more interested in purchasing volume rather than frequency.

Some interesting points may not be included in the model. The attributes of products influence the order frequency. For the critical products, most 3PL users believe that they would not outsource to 3PL providers since they are critical for 3PL users. The non-critical products can be considered for outsourcing to 3PL providers.

The business performance of 3PL providers may affect the order frequency. Once 3PL providers demonstrate success this business mode will be widely accepted by 3PL users, and used frequently. The firm size for 3PL users is an additional factor to influence the frequency.

#### **6.1.1.9 Transaction size – China 3PL users**

The relationship between transaction size and 3PP is not significant based on the findings of the survey data, which is consistent with Jack and Suri's (2011) findings. Some explanations can be found in the interview data.

##### Large transaction size

Most 3PL users have concern of the capability of 3PL providers to consolidate purchase orders. In fact, the providers lack purchasing experience to offer 3PP service since they only focus on transportation and warehousing.

“I have a concern of the ability of 3PL provider to receive and consolidate purchase orders. After all, they may not have mature purchasing experience on this new service since they mainly focus on transportation and warehousing.”

Receiving large transaction size determines the ability of 3PL providers to have strong bargaining power. A respondent has concern of creating large transaction size by the logistics providers.

“I have a concern of whether 3PL provider could obtain large transaction size in order to increase its bargaining power. Otherwise, the logistics provider may not be able to dominate the negotiation process with suppliers.”

Ideally, the large transaction size gives more bargaining power to 3PL providers. However, the ability to find a balance point of negotiation performed by 3PL providers is an issue perceived by 3PL users. When the buyer’s power is larger than seller’s power, it is definite that purchasing price negotiated by 3PL providers can be reduced.

“I am not sure whether 3PL providers could find a balance point during negotiation process.”

Most logistics providers may not offer this service presently, so the consolidation ability performed by 3PL providers is not demonstrated.

“Since most 3PL providers may not offer this service currently, I may not see their ability of consolidating similar orders from users.”

One participant discloses that the company has not built the high level of trust with its 3PL provider and cannot ensure whether the logistics provider can create large transaction size in order to increase the negotiation power.

“Presently, the high level trust foundation between two parties is not completely established. I am not sure whether 3PL providers could have large transaction size to increase their bargaining power at this stage.”

*Increase of aggregated orders*

In real practice, most 3PL users cannot see the ability of their 3PL providers to create large aggregated orders.

“The key point is the ability of 3PL providers to create large consolidated orders. I cannot see this in real practice.”

“If 3PL providers could aggregate those small orders in order to increase their bargaining power, I believe that 3PL providers could have significant power to reduce purchasing price in terms of large purchasing quantities. However, this ability has not been demonstrated. This would be a concern for me.”

A respondent states that having stable cash flows is healthy for its business. Thus, the company may place small orders each time. If 3PL providers are able to aggregate those similar orders together, they have more negotiation power to get lowest purchasing price from suppliers. However, the 3PL user is not sure whether the logistics providers are equipped with such ability.

“This ability [purchasing ability of 3PL providers] is not shown to us at this moment.”

Aggregating similar orders from different customers can help 3PL providers increase their purchasing power. Sustainably offering 3PP service performed by 3PL providers is another critical factor to determine the success of implementation of this value-added service. However, 3PL users have an issue regarding the possession of such ability by 3PL providers.

“The purchasing ability of 3PL providers cannot be visible to us now.”

### Summary

The hypothesis H4b is not supported by the findings of the survey data. Creating consolidated orders by 3PL providers is not shown at the current stage, which is a big concern for 3PL users. Although, theoretically, the large transaction size would give 3PL providers more confidence to get cheap price, 3PL users have another concern whether they could find a balance point during the negotiation process with suppliers. 3PL users indicate that they may place small orders each time, but the ability to aggregate those orders together from different customers performed by 3PL providers is not visible yet.

Some interesting points may not be included in the model. First, the 3PL provider's ability to translate its unique strengths (e.g. national logistics networks), into effective and efficient purchasing, needs to be considered. Offering value-added services requires 3PL providers to continuously exert their own original strengths, which may be fundamental to their ability to include new service. Second, 3PL users might sign blank orders (open contracts signed with the 3PL providers). This could give the providers a rough idea of order quantity for the year. It is better for the providers to negotiate the purchasing price based on aggregated open contracts. It could aggregate those similar orders together and do some preliminary contacts with suppliers in order to select a best suitable supplier for their customers.

#### **6.1.1.10 Value-to-client and benefit-to-provider– China 3PL users**

The relationships between 3PP and value-to-client, and 3PP and benefit-to-provider are significant. Some explanations can be found in the interview data.

Value-to-clients

Most 3PL users state that using 3PP services can relieve some financing pressure. The internal administration cost can be minimised.

“We are highly likely to use this new service since it could relieve some financing pressure for us.”

“...reduce our administration costs.”

Outsourcing non-critical items to 3PL providers can help 3PL users focus on their core competence.

“We do not need to worry about purchasing non-critical products when outsourcing them to 3PL providers. We are able to take more effort to focus on developing our core competence.”

Initially, 3PL users may need to communicate with multiple suppliers, so the associated searching, negotiation, and decision costs are high. Using 3PP service would reduce those costs. Also, 3PL users would not deal with the complex of purchasing processes since 3PL providers can look after all of those things.

“...reduce our searching, bargaining, and decision costs.”

“...help us reduce the complex purchasing processes.”

For the production companies, using 3PP services can increase the level of stability because 3PL providers look after the level of inventories.

“An increase of level of stability is a critical point for our production company. We could reduce the level of risk of out-of-stock.”

*Benefit to 3PL providers*

Most 3PL users express that 3PL providers are able to receive the benefits of increasing their revenues, extending into new business, and keeping customer loyalty.

“I think that our logistics provider can generate more profits, expand from basic services to value-added services, and maintain customer loyalty.”

Using 3PP services can help 3PL providers increase the use of capacity of transportation and warehouse and establish more close relationships with 3PL users.

“...they [3PL providers] can fully utilize their capacity of transportation and warehouse, and also build more close relationships with us.”

When the market for 3PP service becomes mature, more and more potential customers would use this service, so 3PL providers can have large potential order quantities to get cheap purchasing price. Also, the logistics providers can receive more financial support from banks.

“...they will receive more orders from different customers when 3PP service is widely recognized by many 3PL customers. Additionally, offering value-

added service can help the logistics companies generate more profits so that they can get more support from banks.”

One respondent indicates that 3PL providers can increase their market share since, potentially, their current customers can stay with them and potential new customers would adopt them as the logistics providers.

“3PL providers are able to maintain their current customers, and develop and attract more new customers.”

In fact, 3PL providers may act a role of trading agent. Providing 3PP service can enable them to offer ‘one-stop’ service and establish strategic partnership with 3PL users.

“Introducing trading businesses can make the company [3PL provider] offer ‘one-stop’ service, and build up strategic partnerships.”

3PL providers can enhance their own brands in the market, and gain sustained growth ability compared to competitors.

“...our logistics provider can enhance its own brand and obtain sustainable competitive advantages.”

3PL providers can do more to stabilize their business through offering 3PP service.

“...more stability of doing business.”

Summary

The hypotheses of H5b and H6b are supported by the findings of the survey data. For 3PL users themselves, they are able to relieve some financial pressure for purchasing since they outsource the purchasing function to 3PL providers. Also, they can focus on developing and improving their core competence. The complexity of purchasing processes and associated operational costs can be minimised.

3PL users perceive that their 3PL provider can receive more profits, expand its current services, and maintain good relationships with their customers. They not only keep their current customers, but also attract more potential customers to use their services. Offering additional service can provide a chance to build partnerships with 3PL users. In addition, 3PL providers can enhance their own brands in the market and obtain sustained competitive advantages through offering 3PP services.

## 6.1.2 Strengths and limitations to offering 3PP services

### 6.1.2.1 Perceptions from China 3PL providers

#### *Strengths for implementation of 3PP services perceived by China 3PL providers*

Table 6-1 shows the survey's results regarding the strong points for offering 3PP services perceived by China 3PL providers. Most respondents indicate that offering 3PP service can help them improve the level of customer service they offer (93.88%), reduce the purchasing costs on behalf of their customers (88.98%), and help 3PL customers focus on core activities (85.31%).

Factor	Percentage
Purchasing cost reduction for your customer	88.98
Improving your customer service	93.88
Help your customer focus on core activities	85.31

**Table 6-1: Strengths for implementation of 3PP services perceived by China 3PL providers**

Based on the interview data, the major strengths that support offering 3PP services include national and international logistics networks, strong financial strengths, and ability to offer 'all-in-one' standard logistics service and an advanced capability of upgrading information systems. Currently, most China 3PL providers have mature local, national, and international logistics networks, which is a basic requirement to implement 3PP service. Having strong financial strengths can make sure that they are able to not worry about their cash flows, and they can even offer financing services for their customers in order to solve customer financial constraints. Continuously upgrading technology and offering 'one-stop' service can help them attract customers and increase customer loyalty.

There are some additional points mentioned by the respondents.

- Ability to offer differentiated services
- Large customer-based markets
- Understanding supplier markets
- Measuring supplier performance

- Easy to use the current supplier channels to implement 3PP service
- Logistics cost advantages
- Strict standard quality process
- Quick to respond to customers' requirements
- Strong relationships with China Customs and local governments
- Maintaining good relationships with clients and suppliers

Limitations of implementation of 3PP services perceived by China 3PL providers

Based on the outcome of the survey, table 6-2 shows the limitations of offering 3PP services perceived by 3PL providers. The most important limitation is a lack of purchasing expertise (50.49%). The factors of capital (45.41%) and purchasing technology (43.73%) are two other limitations perceived by the logistics providers.

Factor	Percentage
Lack of capital	45.41
Lack of purchasing technology	43.73
Lack of purchasing expertise	50.49

**Table 6-2: Limitations of implementation of 3PP services perceived by China 3PL providers**

Most interviewees frequently express that the major limitations for 3PL providers themselves involve lack of purchasing professionals and unfamiliar with new suppliers. Most 3PL providers do not offer 3PP service at the current stage so they may not have purchasing professionals. Based on the customers' requirements, 3PL providers may need to develop new suppliers. However, they may not be familiar with the performance of new suppliers, including organizational culture, quality of materials, delivery time, and financial situation. Thus, 3PL providers may not manage those new suppliers well.

Moreover, there are some more limitations for offering 3PP services perceived by 3PL providers.

- Unfamiliar with purchasing operational processes
- Lack of accuracy of purchasing plan
- Risk of product return policy
- A perception from 3PL providers that some foreign suppliers or buyers will have difficulty understanding the logistics' providers' routines and working procedures
- Need to better understand the current purchasing policy released by the national and local governments

#### 6.1.2.2 Perceptions from China 3PL users

##### Strengths for implementation of 3PP services by 3PL providers, perceived by China 3PL users

In terms of the survey's outcome (table 6-3), most respondents believe that using 3PP service offered by 3PL providers can reduce purchasing cost (78.51%), improve customer service (75.21%), and enable 3PL users to focus on core activities (70.25%).

Factor	Percentage
Purchasing cost reduction	78.51
Improved customer service	75.21
Focus on core activities	70.25

**Table 6-3: Strengths for implementation of 3PP services by 3PL providers, perceived by China 3PL users**

According to the interview data, the most frequent points for the strengths of 3PL providers to offer 3PP service perceived by 3PL users include advanced logistics technology and strong domestic and international networks, which is consistent with the perception by China 3PL providers. In fact, 3PL providers are able to successfully implement the advanced technology in real practice, such as tracking and tracing

systems. The extended logistics networks offer the significant advantages for 3PL providers because they not only consolidate purchasing orders from different customers, but also quickly distribute those orders to their customers after sourcing.

In addition, the respondents mention other strengths of 3PL providers to offer 3PP services. They are:

- Having strong financial strengths
- High efficiency of operations management
- Effectively managing suppliers
- Integration of customer requirements for domestic and global sourcing
- Low transportation costs
- Purchasing cost reduction
- Increase of capacity utilization of warehousing and transportation
- Advantages of offering accurate transportation and warehousing services
- Potential ability to aggregate large purchasing volumes
- Flexibility to offer customized services

*Limitations related to implementation of 3PP services perceived by China 3PL users*

Based on the table 6-4, the majority of respondents have concerns about using 3PP services. The foremost concern is lack of purchasing expertise (50.83%). The second is lack of purchasing technology (45.61%).

Factor	Percentage
Lack of purchasing technology	45.61
Lack of purchasing expertise	50.83

**Table 6-4: Limitations on implementation of 3PP services perceived by China 3PL users**

Based on the interview data, the majority of respondents frequently mention three major limitations for 3PL providers to offer 3PP services. First, lack of purchasing professionals. The current 3PL providers primarily focus on their basic services, and have no historical experience regarding purchasing. Second, lack of purchasing experience and knowledge; in fact, the scale of implementation of 3PP services by 3PL providers has not achieved a mature stage, so most 3PL providers may not use significant past experience for reference. Also, they may lack professional purchasing knowledge since 3PP service is a brand new service faced by 3PL providers. Third, the current logistics providers lack of return policy for the purchased products.

In addition, some interesting points related to limitations for offering 3PP service by 3PL providers:

- Weak control of purchasing risk
- Lack of knowledge of production line, user's target markets, and attributes of materials production
- Lack of building high levels of trust with 3PL users
- Instability of purchasing volume
- Less flexibility, since 3PL providers may be interested in offering particular products for purchasing

### **6.1.3 The ways to offer 3PP service**

Based on the interview data, the interviewees suggest some possible ways to offer 3PP services. 3PL providers and users sometimes have similar perceptions of offering 3PP service. Both parties (3PL providers and users), however, have different explanations for the similar points. Thus, the researcher lists all of them in two sub-sections, which gives a comprehensive picture regarding the perceptions for both parties.

#### **6.1.3.1 Perceptions from China 3PL providers**

##### Awareness of importance of business changes

Offering 3PP service requires 3PL providers to have awareness of the importance of business changes. The change is from the traditional logistics service to the value-added services. When 3PL providers can enter into the upstream of supply chains (e.g. purchasing), the trading function is added to the logistics companies. They can exert the advantages of networks and communication skills to coordinate between suppliers and customers.

##### The ability of price making

3PL providers should have the ability of price making and effectively managing the relationships with suppliers. Dominating the price negotiation process can give leverage for 3PL providers. Psychologically, 3PL providers have more confidence to obtain cheap purchasing price since they are 'price maker' rather than 'price taker'.

##### Purchasing transaction platform

It is quite important for 3PL providers to set up their own purchasing transaction platform and make sure that their clients are familiar with this new service. The new platform has to integrate the purchasing and logistics operational systems. The integrated systems enable the logistics companies to provide 'one-stop' services, such as, tracking the purchase order.

##### Development of electronic commerce

3PL providers need to maximally develop the function of electronic commerce. Purchasing services include a wide variety of products. The highly efficient

technology of electronic commerce can help the logistics providers respond to the customers' orders, particularly in a Business-to-Business (B2B) situation. The associated transaction costs between 3PL providers and users can be minimised.

#### Promoting 3PP service to the current customers

3PL providers may introduce this new service to the current customers. The existing customers can understand the competence of the company and confidently use 3PP service. Actually, some 3PL providers have offered the service of collecting trade charges. Those logistics companies only need to promote the strengths of 3PP service to them. When 3PL providers implement the service of collection trade charges on behalf of their customers, they can also receive the purchase orders placed from these customers at the same time. Using group purchasing power can reap more benefits for their customers. Also, introducing 3PP service to the current customers is facilitated by the users' good relationships with the logistics companies. If the users find that 3PP service is valuable to their businesses, they may introduce this service to other companies in the same industry. Thus, 3PL providers can have large economies of scale.

#### Offering various services

Firstly, 3PL providers may focus on standardized products for 3PP services since they are easily able to get the advantages of large purchasing volume. Implementation of large purchasing volume can help 3PL providers bid cheap price through negotiating with suppliers.

Secondly, based on the customers' different requirements and needs, 3PL providers might consider offering differentiated services. One is basic category, and another is customised category. For the basic category, 3PL providers can divide into several modules, such as quality check, sourcing, supplier evaluation, and so forth. 3PL users are able to discretionally choose a suitable module based on their individual needs. For the customised category, it totally conforms to the requirements of the customers. 3PL providers would charge the service fees based on degree of customisation.

#### Integration of regional purchasing agents

There are purchasing agents distributed in different regions. It is possible for 3PL providers to bring the local purchasing agents together through using methods of merging and acquisition, so they are able to control the overall purchasing resources in a region. Consequently, 3PL users have to stay with 3PL providers for purchasing and logistics services. Combining different purchasing orders in the region would give more advantages for 3PL providers to get cheap price.

#### Ownership of products

In terms of ownership of products, 3PL providers may keep complete ownership of products during purchasing and logistics processes. They take full responsibility for managing the risk of purchasing, warehousing, and transportation. 3PL users, such as SMEs, may not have rights to control their products until are received. Thus, 3PL users would not take high purchasing risk since the ownership of products is controlled by 3PL providers due to strong financial strengths.

#### Demonstration of leveraging ability

Implementation of 3PP service requires 3PL providers to receive the advantages of scale, which is crucial for them to get cheap purchasing price. Demonstration of strong leveraging ability can attract more customers to use 3PP service, so that 3PL providers can obtain sustained ability to exert the group purchasing power in order to influence the supplier's price.

### **6.1.3.2 Perceptions from China 3PL users**

#### Offering differentiated service

To avoid the potential hazard of competing only on price, 3PL providers need to consider ways to differentiate their offerings. This may require adding specialists to their purchasing team. Some industries may require specific qualifications and experience for purchasing experts. Thus, 3PL providers may need distinguished purchasing experts from different industries.

In addition, the 3PL providers should consider offering standardized and customized purchasing services to the users. Standardized services have fewer options for the

users, but the price is the lowest. Customized services may require the customers to have large purchasing volume or transaction size since 3PL providers still need to make profits for the customized service.

#### Financing service

Most large 3PL providers have strong financial strength. It is possible for them to attract SMEs to use this service through offering financing service for them. Most SMEs might not have strong cash flows or high credibility with banks. Borrowing money from the banks could be a major concern for SMEs. If the 3PL provider offers financing service and purchasing service together, SMEs could relieve their huge finance pressure.

#### Introducing to the current customers

It is thought that the best strategy to implement 3PP would be to introduce this new service to existing customers, first, since those customers have established relationships with 3PL providers. It is highly likely for them to accept using this new service, and it is a good way for the provider to gain real experience as to how the market responds to this new service. In addition, the logistics companies can receive early feedback from the veteran customers to quickly make needed adjustments to their services. 3PL providers may also want to use some successful cases to increase their market share for this market. Promoting successful cases to implement 3PP services can increase confidence of their potential new customers to use this service.

#### Introducing 3PP service on the company's websites

A 3PL provider could offer its purchasing website so that 3PL users could understand what types of products 3PL providers can offer. Also, 3PL providers need to ensure the short replenishment cycle time, lowest purchasing price, high quality standard to meet users' requirements, and a service for product return.

#### Internal integration

3PL providers have wide purchasing networks to serve the customers. They also need to have professional purchasing as part of their logistics teams. For the purchasing professionals, 3PL providers need to add purchasing experts to their logistics team to

conduct purchasing activities such as negotiation, contracting, supplier market research, and supplier evaluations. Internal integration would be required.

#### Demonstration of low purchasing price

3PL providers have to prove the purchasing price they offer is lower than the current market price. This point is very important for both parties. When the customers are convinced that they are receiving the lowest price from 3PL providers, they are likely to place more orders for next time. Then, the 3PL provider could maximally utilize its capacities of warehousing and transportation with a minimum cost through consolidating more similar orders.

#### Establishment of purchasing systems

3PL providers need to improve their abilities of controlling transaction cost since there are many transactions between users and suppliers. Establishing a comprehensive purchasing system is a differentiating attribute for 3PL providers. The customers are able to choose suitable service modules based on their requirements and needs.

#### Clarifying the process of quality check for purchased products

3PL providers should keep their promises that all purchased products can meet the standard of customers' requirements, and the 3PP process should include an evaluation of supplier quality systems.

#### Continuously improving customer service levels

3PL providers need to continuously improve the current service level. When their competitors offer a similar purchasing price, 3PL users may evaluate the overall performance and service levels before making a decision. Offering better services would provide more opportunities to attract customers.

### **6.1.3.3 Additional information related to offering 3PP service**

Based on the survey data, this section describes additional information related to offering 3PP service.

*China 3PL providers*

Table 6-5 shows the important reasons that 3PL users will want to use 3PP services, perceived by China 3PL providers. Trustworthy (91.84%), strong reputation (90.20%) and economic benefits (87.35%) are the three most important reasons to offer 3PP services perceived by 3PL providers.

Reason	Percentage
Your organization is trustworthy	91.84
Your organization has a strong reputation	90.20
Your organization improves its competitive market position	66.94
Your organization receives economic benefits	87.35
Your organization helps customers achieve workforce cost reductions	77.14

**Table 6-5: Reasons that 3PL users will want to use 3PP services, perceived by China 3PL providers**

Table 6-6 shows the importance of criteria for the Request for Proposal (RfP) process perceived by 3PL providers. The information system capabilities (95.51%), the quality of the management (94.69%) and financial strengths (92.24%) are the three most important criteria for the RfP process perceived by 3PL providers.

Criteria	Percentage
Price	90.20
Capacity	91.84
Financial strength	92.24
The quality of the management	94.69
Information system capabilities	95.51

**Table 6-6: Criteria to assess the Request for Proposal (RfP) process perceived by China 3PL providers**

China 3PL users

Table 6-7 illustrates the reasons that a user might choose their provider's offer of 3PP. Trustworthy 3PL providers (67.35%), strong reputation of 3PL providers (60.82%), and workforce cost reduction (60.00%) are the most important influences on outsourcing purchasing decisions, perceived by 3PL users.

Reason	Percentage
Your 3PL provider is trustworthy	67.35%
Your 3PL provider has a strong reputation	60.82%
Your 3PL provider improves your competitive market position	54.29%
Your 3PL provider offers economic benefits to you	59.59%
Your 3PL provider helps you achieve workforce cost reductions	60.00%

**Table 6-7: Influences for outsourcing purchasing decisions perceived by China 3PL users**

Table 6-8 shows the importance of information obtained from RfP. According to the survey results, the quality of the management (76.03%), capacity (73.97%), and information system capabilities (71.07%) are the three most important variables considered by 3PL users.

Criteria	Important
Price	70.66%
Capacity	73.97%
Financial strength of your 3PL provider	67.77%
The quality of the management of your 3PL provider	76.03%
Information system capabilities of your 3PL provider	71.07%

**Table 6-8: The importance of information obtained from the Request for Proposal (RfP) perceived by China 3PL users**

#### **6.1.4 Benefits of offering or using 3PP service**

This section summarizes key points frequently mentioned by China 3PL providers and users.

##### **6.1.4.1 Value-to-client perceived by China 3PL providers**

Most 3PL providers frequently stress three important values for their clients: core competency, purchasing cost reduction, and low purchasing price. Also, outsourcing the purchasing function to 3PL providers helps 3PL users focus on their core competency. The purchasing costs can be divided into two parts. One is a direct cost. Another is indirect cost, such as employee salary. Using 3PP service can reduce the direct and indirect costs for 3PL users. Aggregating small purchase orders by 3PL providers can achieve low purchasing price. Also, 3PL providers mention other values for their clients through using 3PP service. They are:

- Purchasing risk reduction
- Helping international firms enter Chinese markets
- Offering consistent logistics systems by 3PL providers
- No need to have a purchasing team
- Reaching both domestic and international sourcing markets without concerns about logistics costs
- Enhancing overall competitiveness
- Order processing can be controlled by 3PL providers until the orders arrive
- No financial constraints since 3PL providers offer the financing service
- Offering instalment payment method

##### **6.1.4.2 Benefit-to-provider perceived by China 3PL logistics providers**

In terms of benefits for 3PL providers themselves, they frequently mention that increasing profits, customer loyalty, and fully utilizing their capacities of warehouse and transportation are critical benefits to be derived from offering 3PP service. Including value-added service (e.g. purchasing function) can help 3PL providers increase their profits, and improve their relationships with their customers in order to maintain customer loyalty. Implementation of 3PP service can enhance the efficiency of managing warehouse and transportation utilization. Additionally, there are some more benefits for 3PL providers from offering 3PP service. They are:

- Improving core competence
- Maintaining competitive market position
- Extending logistics service
- Enhancing company's reputation
- Having additional profit source
- Increasing capital turnover
- Receiving additional fees from 3PL users when 3PL providers offer financing services
- Increasing the size of 3PL business

#### **6.1.4.3 Value-to-client perceived by China 3PL users**

The majority of respondents indicate that the three major values to use 3PP services include cost savings, focusing on core business, and administration cost reduction. Additional values are also involved:

- Assurance of quality check
- Price advantage
- Reducing searching and information costs for development of suppliers
- Reducing costs of developing and improving the current purchasing technology
- Reducing the complex purchasing process, such as RfP
- Increase of level of stability
- Reducing the level of risk of out-of-stock
- Workforce reduction
- Time savings

#### **6.1.4.4 Benefit-to-provider perceived by China 3PL users**

Most 3PL users frequently mention that their 3PL providers can receive benefits through offering 3PP service: this includes having long-term relationships with customers, keeping customer loyalty, and extending from traditional logistics service to value-added services. Other benefits for 3PL providers mentioned by 3PL users are:

- Having more potential customers
- Becoming a centre position in the network
- Having more financial support
- Generating better profit margins
- Growing the business due to economies of scale
- Obtaining one more profit growth source
- Increasing their market share
- Increasing capacity utilization of transportation and warehouse
- Increasing attractiveness to customers
- Enhancing the brand of the company
- Having sustained growth ability

### **6.1.5 Overall perceptions of implementation of 3PP service**

This section primarily describes the overall perception of implementation of 3PP service perceived by China 3PL providers and users.

#### **6.1.5.1 Perceptions from the perspective of China 3PL providers**

Most participants believe that 3PL users, such as SMEs, are highly likely to use 3PP service based on the cost/benefits. 3PP service will become one of the major trends in the market. Purchasing costs, typically, are a major component in user's cost structure. Using 3PP service not only helps 3PL users reduce purchasing costs; they can focus on their core competences. In fact, most SMEs are eager to find a purchasing agent to outsource its purchasing activity to. 3PL providers have their own advantages to offer this new business since 3PL providers are no longer just a logistics carrier, and offering 3PP service can change their traditional roles into a key player in supply chains.

A few respondents have neutral perceptions. Actually, most SMEs do not know about this new service. It may take some time to let them become familiar with this new service. If they really see some benefits, they are willing to use this service for a long-term. Also, successfully implementing 3PP service may depend on the types of products and demands for outsourcing.

Most 3PL respondents express that they are able to include this new service. 3PL managers should be aware of the change to their businesses, from a traditional logistics carrier to a significant supply chain player. Using advanced technology enables 3PL providers to coordinate suppliers and customers in one system platform and the overall transaction costs can be minimised. There are several key advantages for 3PL providers to successfully implement the concept of 3PP service. Firstly, 3PL providers have international and national logistics networks so that they are able to collect customers' orders and find the suitable suppliers across the world. Second, 3PL providers have strong financial support to implement the 3PP service. Thus, it is not difficult for them to launch this new service. Third, they are able to recruit purchasing professionals from the job markets to join their companies.

However, there is one issue that must not be overlooked in the implementation of 3PP service—a purchasing policy. In the China logistics industries, most players do not have formal purchasing policies. It is highly recommended for them to stipulate a series of policies and enforcements for the purchasing activities, which are very useful to prevent opportunistic behaviours for purchasing. Both 3PL providers and users have to follow the legal policies to conduct their business behaviours.

#### **6.1.5.2 Perceptions from the perspective of China 3PL users**

All respondents indicate that they are highly likely to use 3PP service since they can receive more benefits through using this new service, and relieve their financial pressure for purchasing products. Also, 3PL providers can presumably guarantee the quality, price, and costs of the purchased products.

3PL users believe that 3PP service is a good concept since 3PL providers get a chance to play a purchasing agent role in China. The market demand for outsourcing purchasing services is potentially large. 3PL providers have more leverage to negotiate price downwards, based on their domestic and international networks, accurate international freight forwards, strong financial strengths, advantages of supplier relationship management, and advanced technology. Those attributes can attract more customers to use this service.

However, some respondents point out two constraints for implementing 3PP services. First, the concept of outsourcing may not be fully recognized by most 3PL users. It may take a long time for them to understand the advantages of outsourcing. Second, the degree of compatibility between the level of outsourcing recognized by 3PL users and the ability of 3PL providers to offer 3PP service is not shown in the markets. In fact, most 3PL providers may not offer this service presently, so the purchasing and leveraging activities that would be performed by 3PL providers are not demonstrated to their customers. 3PL users may not have a high level of trust regarding competence of 3PL providers to play the role of purchasing agent. Traditionally, Chinese logistics firms are mainly responsible for transportation or warehousing for large quantities of products. If they change the current function from the traditional logistics fields to extend to the functional markets (e.g. purchasing function), 3PL providers would need

to bring in an additional function to their current business. 3PL users consider that the structure of the supply chain could be changed because the traditional logistics providers are responsible for transiting goods from one place to another place, but now they offer the purchasing function as a value-added service. Therefore, the whole supply chain structure is changed based on suppliers, 3PL providers, and buyers. Dealing appropriately with the triad relationships among those three major players is very important to the successful implementation of 3PP service.

## 6.2 Discussion of the findings from New Zealand data

### 6.2.1 Hypotheses discussion

#### 6.2.1.1 Asset specificity – NZ 3PL providers

According to the results of New Zealand data analysis, asset specificity does not have a significant relationship with 3PP. This is consistent with Aubert et al. (2006) and Patry et al.'s (1999) findings. According to the interview data, there are some in-depth explanations from three perspectives.

#### Recruitment of purchasing professionals

Most informants indicate that they need some experts who have gained some knowledge and experience of international logistics. They expressed that:

“The buyers who worked at grocery and FMCG (fast moving consumer goods) industries could be recruited since they have got professional qualification and relevant work experience.”

One informant indicates that the company is going to offer 3PP service, and does not have wide experience in the purchasing field.

“I would hire somebody who would have past experience in different industries from our customers' companies.”

One manager from the healthcare logistics company expresses that the company is able to get purchasing experts from DHBs (District Health Boards).

“...we could recruit purchasing expertise from those DHBs. DHBs do not need to recruit their own purchasing professionals.”

3PL providers need to have some purchasing expertise since they may need to deal with the liability with suppliers. If any clause of a purchasing agreement is breached, 3PL providers need to pay for it. One manager stated:

“We could get those people [purchasing experts] who have purchasing and negotiation experience in a particular industry from our recruitment websites.”

3PL providers need some purchasing experts to do this new service, and leave the users to develop their core competence since they are not professionals and are not prepared to negotiate with suppliers and distributors, such as suppliers in China and Japan. In fact, purchasing is a quite complicated process because purchasing and collaboration need to be considered at the same time. It requires more related companies to work together. One informant states that the logistics company wants to make profits and, also, expects to offer financial benefits for other supply chain partners, such as customers and manufacturers. It is critically important for the logistics provider to consider the financial perspective to determine whether they may recruit the necessary numbers of required purchasing professionals. The manager stated”

“Generally speaking, the purchasing professionals can be obtained from the job fairs.”

One manager expressed that most of their customers use warehouse management system (WMS) to replenish products. Its customers can place purchase orders based on their requirements through using WMS systems.

“We do not need the purchasing expertise since the purchasing criteria have been set by both parties.”

3PL providers may need someone who understands more fully the opportunities in existing market places for value-added services. Also, 3PL providers need those professionals who are able to speak Mandarin, Cantonese, Thai, and so forth, because they want to integrate their businesses with international freight forwarding. The informant points out that the logistics company has many branches in the world, and they have a lot of opportunities to implement 3PP service.

“Some purchasing experts could be recruited from manpower agencies since we do not know their abilities at the starting point...we could directly recruit

some people who have gained both foreign language and purchasing experience and worked in other industries for several years.”

*Additional investments for 3PP service*

Most participants do not believe that their companies need to have additional investments in the current facilities.

“We do not need to invest more funds on improvement of them [logistics infrastructure].”

“Our facilities are quite good so we do not need to put additional investments for further improvement.”

One manager from the international logistics company suggests that the company has adopted the advanced logistics technology, and uses the world-class logistics facilities:

“...our company does not invest large funds into development of the current logistics infrastructure.”

Another manager suggests that the current logistics infrastructure can meet the daily requirements of 3PP service. Offering 3PP service could improve the utility of their facilities.

“Offering 3PP service helps us maximally utilize our logistics facilities.”

It is not costly for 3PL providers to fulfill the purchasing function although some 3PL providers do not have it in the current systems.

“Our logistics systems are quite efficient...adding purchasing function does not need more money invested in the current system.”

*Building close relationships with clients*

An established high level of trust with 3PL users is very important for 3PL providers since they must confidently share supply information with their customers. Having a strong trust mechanism makes it easy for 3PL providers to introduce new value-added services to the clients. One respondent indicates that the company focuses on close relationships with users since those people would be its main target audience for introducing this new service. If a customer trusts someone to look after its purchasing, shipping, and supply chain management, it has to have a high level of trust foundation because if something goes wrong with its supply chain, like price, product quality, and delivery on time, it may destroy the businesses for both parties.

“The reliable trust foundation is quite important for us to implement 3PP service.”

“...customers who have close relationships with us [3PL providers] would be a first group to use this new service.”

In fact, 3PL providers have good relationships with their customers. There is no need for them to have additional investments on maintaining their relationships with customers.

“...it is not required for us to invest more money on maintaining relationships with our customers.”

One logistics informant stated that the company has well established interpersonal relationships with its clients. 3PP service, as a new business, should be introduced to the current customers based on established good interpersonal relationships.

“...our company has built good relationships with 3PL customers; established trust mechanisms with clients, and understood the clients. Now, we get more chances to do business with them. Having good interpersonal relationships, it is easy for us to promote this new service to our customers”

Generally, 3PL providers always offer cheap prices to attract their customers. Although the strategy of low price can attract customers, it is difficult for 3PL providers to maintain long-term businesses without good relationships. 3PL providers may still lose their businesses although they offer good price. One of the informants stated:

“Established good relationships with our clients help us to easily introduce new services to them [3PL customers]. We are able to maintain our business.”

Some 3PL providers have established strategic partnerships with their customers. Having good relationships with 3PL customers is a foothold to keep their profitability.

“...established strategic partnership with us.”

### Summary

The hypothesis H1a is not supported by the findings of the survey data. It is not necessary for 3PL providers to invest huge amounts of money on recruiting purchasing experts because those purchasing professionals can be obtained from 3PL customers' companies. Alternatively, the purchasing experts can be obtained from job fair and official 3PL companies' websites. In terms of additional investments on logistics facilities, the informants present that the logistics providers do not need to put additional investments into the current facilities. Offering 3PP service can maximally use the capacity of warehousing and transportation and increase the efficiency of utilization of their facilities. Most informants indicate that they have

built good relationships with their customers, and those people would be a first group for introducing 3PP service. They do not need to invest additional efforts to maintain good relationships with their customers.

The factor of trust is not included in the model. Some informants have mentioned that building a high level of trust is a critical important factor to influence 3PP service. 3PL customers should trust their 3PL providers before outsourcing the purchasing function to them. Also, 3PL providers are capable of sustainably receiving purchase orders based on the solid foundation of trust between the two parties.

#### **6.2.1.2 Uncertainty – NZ 3PL providers**

The relationship between uncertainty and 3PP is significant, which is consistent with Reeves et al.'s (2010) and Bienstock and Mentzer's (1999) findings. There are some explanations from three perspectives in terms of interview data.

##### *Demand for outsourcing purchasing services*

3PL providers think that 3PL users who want to use this service can place purchase orders for a long term since their customers do not want to change their orders all the time.

“If the system [of offering 3PP service] works well, nobody wants to destroy this.”

One manager states that the demand for 3PP service can be stable for a long time.

“...most 3PL customers want to get products from import and sell them to the markets. They do not want to have large procurement and logistics departments spending the time to purchase and distribute products in New Zealand. More and more companies want to focus on what they do well.”

One informant believes that if the logistics company offers 3PP service, the demand for using such service will be there. The respondent confidently indicates that they

have had standard contracts with customers for a long time. It is possible for the customers to constantly use this new service.

“I believe that the demand [3PP service] can be more constant.”

Another manager indicates that the company is a recognized logistics solution service provider. It is heavily involved in FMCG, apparel, and the grocery trade. The strengths of the company include size, scale and flexibility, so the company is able to bring more business opportunities for its customers.

“I think that our customers would be keen to stay with us, and trust us to bring more benefits for them through using this new service...the purchasing demand will not fluctuate.”

#### Return of value to 3PL providers

Implementation of 3PP service suggests that 3PL providers focus on specific industries. For instance, a 3PL provider is specialized in handling sea food or frozen products. It is not possible for every logistics company to enter into this market, so the logistics company can maintain its return of value.

“I do not think that the market for 3PP service is more competitive if our company focuses on developing a particular industry.”

There are only a few competitors that could enter into the 3PP market since it is very specialized. Most of New Zealand logistics companies focus on basic services. Only a few competitors emphasize developing their value-added services. For example:

“The main focus of our company is on the value-added services and a lot of customers coming in. In terms of other competitors, they might still focus on the basic services.”

One informant indicates that 3PL customers would choose their logistics service providers based on their own situations, so the overall competition is not very worrisome.

“A lot of customers are inclined to use a bigger company. Preferably, one they have dealt with before, because they perceive a need for broader services. Yet, other customers will stay with a smaller provider because of the strength of the relationship and because they do not yet perceive a need for other services.”

Change of customer orders

3PL providers believe that small orders need to be placed more regularly.

“3PL providers can consolidate the purchase orders from many customers and can make them up in a way that each member can connect their small orders regularly in order to achieve cost savings.”

One manager indicates that the New Zealand market would not be quickly changed.

“No, I do not think so, because market change will not be so fast, such as New Zealand.”

Another manager has similar perception that the customers always buy certain slices of the markets. The demand would not be changed significantly in New Zealand based on a certain amount of population.

“The size of market would not be changed.”

Summary

The hypothesis H2a is supported by the findings of the survey data. The majority of 3PL providers believe that the customers would not change their orders all the time. 3PL providers can focus on different specialized industries, so they are still able to receive benefits through offering 3PP service. In addition, 3PL providers believe that the customers' orders would not be significantly changed since the overall New Zealand market is small, and they do not want to have more inventories

### **6.2.1.3 Frequency – NZ 3PL providers**

Frequency and 3PP have a significant relationship. This is consistent with Hanna and Maltz's (1998) findings. According to the interview data, there are some explanations from three aspects.

#### *Frequency of receiving purchase orders*

Most 3PL providers expect to receive orders weekly since the weekly orders help them improve the forecasting accuracy, and fully use their capacity:

“...help us increase accuracy of forecasting, and fully utilize our capacity.”

“...it is easy for the forecasting and planning.”

The order frequency impacts on the value of products ordered, the lead time from placing an order to receiving it, safety stock/ buffer stock, and transportation costs involved.

“...the high value products can be received weekly.”

Another respondent indicates that the FMCG products can be done weekly or daily.

“It could be done weekly or daily.”

#### *Reduction of fixed cost per transaction*

Most respondents think that more orders coming can enhance their logistics facilities, and the increase of frequency can reduce the fixed costs.

“...the fixed cost per transaction is minimized.”

“...highly possible to reduce our fixed cost when the order quantity dramatically increases.”

Normally, most SMEs tend to sell one and buy one based on the local companies' working routine. This style of business is practical in New Zealand. The frequency of their orders can increase in terms of their selling amount.

“The fixed costs for our company are reduced based on a number of increased frequencies.”

SMEs do not have much more buying power and they may shorten their order periods.

“The order frequency for SMEs would be high... it is possible for us to reduce fixed costs per transaction due to high frequency of placing orders.”

One manager believes that most SMEs are likely to embrace the concept of 3PP service and place small orders each time.

“When receiving orders frequently, our fixed cost per transaction is reduced.”

*Increasing frequency resulting in having more negotiation power*

3PL providers believe that consolidating customers' orders, with fewer amounts, will provide the big orders needed for leverage.

“...enables us to get reasonable price for our customers.”

One manager indicates that the more 3PL customers buying, the cheaper price 3PL providers can get.

“...it means five clients order from same suppliers, and if we are able to combine those orders together, we can get cheap price.”

When 3PL providers implement 3PP service for international markets, the higher order frequency can help them aggregate large order quantity, and their bargaining power can be stronger.

“...we could increase our bargaining power.”

One manager has high confidence that the company is able to aggregate those small orders in order to have more leveraging power when they negotiate the purchasing price with suppliers.

“...it increases our ability to aggregate those small orders.”

### Summary

The hypothesis H3a is supported by the findings of the survey data. Most 3PL providers want to get weekly orders, and they believe that the order frequency from SMEs would be high, so the fixed cost per transaction can be reduced. Increasing frequency enables 3PL providers to meet large order quantity and enhance their bargaining power.

Some interesting points may not be included in the model. The frequency of ordering may impact on the value of products ordered, including the lead time from placing an order to receiving it, and on safety stock, as well as the transportation costs involved. Some cheap products can be held in the shipping areas for several weeks rather than processing them into the warehouses and holding them for three or four months. Another interesting point is order regularity. Order regularity is more beneficial for 3PL providers because 3PL providers can regularly aggregate the customers' orders together. They are able to understand the customers' order patterns and quantity, and improve the forecasting accuracy.

#### **6.2.1.4 Transaction size – NZ 3PL providers**

Transaction size and 3PP have a significant relationship based on the findings of the survey data, which is consistent with Verwaal and Donkers's (2003) findings. There are some explanations from the interview data.

#### Large transaction size

Most 3PL providers think that larger transaction size can get the benefits of economies of scale. Certainly, size creates pressures on price. Batching\aggregating is a quick way to create large size.

“It [larger transaction size] can increase our purchasing power, and help us consistently utilize the capacity of space.”

“...give us good opportunities to bid a better price.”

One manager indicates that the company expects to have large transaction size since it enables the logistics company to have the advantages of purchasing volumes.

“The large transaction size allows us to have more purchasing volume.”

Another manager expresses that offering 3PP service requires that a lot of similar orders are needed to be combined, so the larger size of similar orders enables us more power to reduce purchasing costs.

“The more you buy, the cheaper you could get. The influence of price should depend on the purchasing volume we got.”

The key aspect to implement the 3PP service is determined by the volume of service. Having a large purchasing volume would give 3PL providers more leverage power to influence the purchasing price.

“The volume of service drives the success.”

“It gives us strong ability to make a good deal for our customers.”

#### *An increase of aggregated orders*

Aggregated small orders give more benefits for 3PL users, no matter the quantity of orders they placed. Even though all the benefits can be averaged out, 3PL providers are able to get the old order frequency patterns from their customers, and maximize those orders together in order to get more bargaining power.

“Receiving more orders from my customers helps our company create one large order. That could be more beneficial for cost reduction.”

“...we have more negotiation power to reduce the purchasing price based on the volume of orders.”

One manager points out that an increase of aggregated orders enables the company to reduce the handling it has to do.

“Everything that could be combined is always better...the aggregated orders are a big advantage for us.”

One informant indicates that medium-size customers would be low risk and more stable through aggregating their orders. It is possible to introduce this new service to those customers.

“...they [medium-size customers] have large amount of quantities for each order... they are more stable to combine their orders.”

Another manager expresses that most customers are likely to place small orders each time. Combining those purchase orders together can increase the logistics company's bargaining power.

“...could have a chance to get good purchasing price.”

### Summary

The hypothesis H4a is supported by the findings of the survey data. 3PL providers think that the large transaction size would get the benefits of economies of scale for the purchase orders. It could give more pressure in order to get good purchasing price when negotiating with suppliers. Also, 3PL providers are able to understand the past routine process for purchase orders, and maximally combine the purchasing orders to get cheap price. Aggregating purchase orders is a big advantage for the logistics providers.

There is one interesting point that is not covered in the model. The factor of confidence of 3PL providers to implement 3PP service may be considered in future research. The confidence of 3PL providers can affect the level of trust with their

customers for outsourcing the purchasing function. If 3PL providers confidently implement 3PP service, they are able to get more purchase orders and exert their advantages of group purchasing power.

#### **6.2.1.5 Value-to-client and benefit-to-provider – NZ 3PL providers**

3PP and value-to-client, and 3PP and benefit-to-provider have significant relationships. 3PL providers believe that 3PP service is positively associated with value-to-client and benefit to themselves. There are some explanations from the interview data.

##### *Value-to-client*

3PL providers explain that their clients are able to receive the benefits of cost savings, accountability of stock management, and claim damage.

“...our customers can get the cost savings. They do not need to manage the inventory for their non-critical products. Also, they could get the damage claim if there is any error during the purchasing and transportation processes.”

3PL users can be attracted to an integrated service, reducing the searching and other relevant costs.

“...use an integrated service...reduce searching costs and other relevant costs.”

One manager points out that the customers can get the transportation fast.

“They [3PL users] could get freight fast because they get products from New Zealand rather than China. They do not have to wait. They could get average two days from any points of New Zealand. But they could get containers from China between 21 to 28 days.”

3PL users can focus on what they can do best and reduce the administration costs.

“They do not need specialized staff to look after purchasing, transportation, and distribution...reduce administration costs, such as labour costs”

3PL users do not have the financial pressure of the purchasing function because 3PL providers have strong financial strength to support this service.

“...they can receive direct financial benefits and cost reduction.”

3PL providers would have quality assurance and share the purchasing risks for their customers.

“...we can help our customers for the quality check and share the purchasing risk.”

#### *Benefit to 3PL provider*

3PL providers can get the benefits of growing market share.

“We could get more customers and increase market share. Also, we can enter into different markets or commodity groups in order to extend a new market.”

The logistics providers can increase the usage of their capacity and keep customer's loyalty.

“...maximally use our space...increase customer's loyalty.”

“...increase of customer loyalty and offering 'one-stop' service.”

3PL providers are able to get some improved profit margin and increased ability to be tied in with their customers.

“...this service [3PP service] is not free... the more service we offer, the less opportunities that they are looking for others to do logistics services. It can lock in the customers.”

### Summary

The hypotheses of H5a and H6a are supported by the findings of the survey data. 3PL providers think that their customers can receive cheap purchasing price with quality assurance and low purchasing risk. The associated purchasing costs can be reduced through outsourcing the purchasing function to 3PL providers. In addition, 3PL users are able to focus on their core competence without financial pressure on the purchasing function because 3PL providers can offer financing service.

For 3PL providers themselves, they can get improved profit margins though offering this value-added service. They can also lock in the customers and keep customer loyalty. Additionally, the logistics providers can extend their new market and increase their market share. Their capacity can be more fully utilized through offering the purchasing function.

#### **6.2.1.6 Asset Specificity – NZ 3PL users**

According to the results of the survey data analysis, the relationship between asset specificity and 3PP is not significant. This is consistent with Nam et al.'s findings (1996). There are some explanations from the interview data.

#### Recruitment of purchasing professionals

The informants state that 3PL providers do not need to invest large funds in recruiting purchasing professionals since they can obtain the experts from 3PL users' firms, and human resource agents.

“...recruit some purchasing professionals from us [3PL users], so they [3PL providers] do not need to have additional costs on this.”

“...the purchasing experts can be obtained from HR agents.”

One manager indicates that the purchasing experts can be obtained from human resource professional websites. This is a more economical way to get the qualified people for 3PL providers.

“They [3PL providers] could put recruitment information and requirements on their websites and other human resource professional websites. This should not cost them too much.”

#### *Additional investments for 3PP services*

3PL users do not believe that their 3PL providers need to have additional investments on warehousing and transportation.

“...for warehousing and transportation, they do not need to do it [investment].”

One manager indicates that 3PL providers do not need to upgrade their current infrastructure. Exchanging Virtual information would be fast and convenient for 3PL providers and users.

“...its distribution center could be anywhere. Ten years ago, I would say ‘yes’. Anything needs to be close, but right now, the information could be passed virtually. We could place orders on line since it is quite convenient for us to run the business.”

Some 3PL providers may not have the purchasing function in their current systems. 3PL users expect that 3PL providers may have integrated websites, so they are able to use their user ID to place an order online, and receive the invoice. However, such improvement may not require 3PL providers to have high investments.

“...I pretty much expect that they [3PL providers] can have integrated websites, so we can place an order and receive the invoice online...this [upgraded technology] does not cost too much for them [3PL providers].”

“We expect that they may provide compatible integrated systems combining purchasing, track/trace, and transportation systems. Such investment is not high for them [3PL providers]...they could provide a web shop... we can place an order from the web shop, and then, they dispatch our order.”

### *Building close relationships*

3PL users indicate that outsourcing purchasing products to their 3PL providers is not their core business, and the current relationships with 3PL providers can meet their requirements.

“Not necessary, the current relationships with our logistics providers can meet our requirement...outsourcing purchasing products to 3PL providers is not our core business, so we would not expect that they invest more capital on improving the current relationships.”

One manager indicates that the relationship with the logistics provider is quite good. 3PL providers can understand what their customers need, and accurately offer the service to them.

“...they [3PL providers] can understand what we are dealing with, what types of service to provide to our company, and deliver our products at the promised time.”

Another manager expresses that the company has contractual relationships with its 3PL providers. It is not necessary for the company to establish the fixed trust and partnership with its logistics providers.

“We have contractual relationships with our 3PL providers. Purchasing non-critical items may not require establishing a fixed trust and partnership with

them. Maintaining current relationships with our logistics providers can keep our business flowing.”

### Summary

The hypothesis H1b is not supported by the findings of the survey data. The purchasing professionals can be obtained from 3PL users’ companies, human resource agents, and professional recruitment websites. 3PL users think that their logistics providers do not need to invest additional capital in improving their logistics facilities. Exchanging virtual information has changed the traditional business style, so it is not required for 3PL providers to build a distribution centre which is close to their customers. The current relationships between 3PL providers and users are pretty good, 3PL users do not expect that their logistics providers need to put more effort into improving the relationships. The 3PL providers are able to understand what their customers want and need.

The factor of trust is not included in the model. Outsourcing non-critical products to 3PL providers may not require building a high level of trust since those products are not core business for 3PL users. For the strategic products, 3PL users may consider having strategic partnerships with their logistics providers.

#### **6.2.1.7 Uncertainty – NZ 3PL users**

The relationship between uncertainty and 3PP is significant. This is consistent with Reeves et al.’s (2010) and Bienstock and Mentzer’s (1999) findings. There are some explanations from the interview data.

### Demand for outsourcing purchasing service

The respondents show that their 3PL providers can understand the operation process of their customers. When 3PL providers offer 3PP service and their customers get some history of it, 3PL users can have more confidence in what they are going for. Additionally, 3PL users would like to share some forecasting data and purchasing volumes information with their 3PL providers. The annual demand would not be significantly changed since 3PL users have the prediction for outbound in the five year plan.

“3PL providers can understand our operational process...we do share forecasting data with 3PL providers on a monthly basis. The benefits for that are that they build on what we are doing with forecasted sales. From the volume side, we do share the information to 3PL provider...also, we do forecasting for outbound in our five year plan.”

One informant suggests that if 3PL providers can bring more savings for 3PL users, so the demand for 3PP service would be constant.

“If our logistics companies can bring more savings for us, we will definitely continue using this service since, at the beginning stage, it [3PP service] is price and service driven...our purchasing demand would be constant.”

#### *Achieving company's goals*

The major objective of using 3PP service is to achieve low purchasing price through consolidating purchasing orders by 3PL providers. It is more efficient for 3PL providers to control the progress of purchasing.

“The concept is good for us to receive benefits when our 3PL providers gather small orders together since they could get good purchasing price for us.”

One informant indicates that 3PL providers can get the low costs for generic and consumable products.

“Yes, it could be possible for 3PL provider to help us achieve the low cost of purchasing generic and consumable products.”

One manager shows that the aim of the company is to get the best price and wants to have negotiation power globally.

“Our 3PL providers help us achieve our target, like purchasing cost reduction and global sourcing.”

### Change of purchase orders

The informants indicate that the New Zealand market is quite stable so the purchase orders may not be significantly changed.

“Our purchase orders would not be changed since the size of this market is quite stable.”

One manager states that the demand for non-critical products cannot be changed. The usage for those products would be constant, such as consumables.

“Our demand will not be changed for non-critical products.”

### Summary

The hypothesis H2b is supported by the findings of the survey data. 3PL users think that the product demand using an outsourcing purchasing function is not dramatically changed. They would share the forecasting figures and production plan with their 3PL providers. Low purchasing price is one of the key objectives for 3PL users and their logistics providers can help them achieve their goals. The change of purchase orders would not be significant because the New Zealand market is quite constant.

#### **6.2.1.8 Frequency – NZ 3PL users**

The relationship between frequency and 3PP is not significant. This is consistent with Anderson and Schmittlein's (1984) findings. There are some explanations from the interview data.

##### *Frequency of placing purchase orders*

The informants indicate that monthly orders would be preferred since they want to have certain inventory to meet uncertain demand.

“Our company could place monthly orders.”

One manager indicates that the monthly orders would be more realistic as the company forecasts the market demand based on each month.

“We prefer to process orders monthly because we do the forecasting for each month.”

3PL users may want to outsource non-critical products, such as consumable products to their logistics providers for purchasing. The monthly or quarterly orders would keep transaction costs low.

“For consumable products, we prefer to place monthly or quarterly orders.”

##### *Monitoring purchasing activities*

Most informants indicate that their orders are based on monthly planning and their outsourced products are non-core items. The associated cost to monitor purchasing activities is not high.

“We do not need to increase costs to monitor purchasing activities because we do planning for each month...the outsourced products are non-critical items.”

One manager shows that the company may not have much more order frequency, than once a month or even a quarter. The costs to monitor purchasing activities are not high.

“Our organization may purchase less frequently because the total demand is less.”

*Enhancing purchasing power by an increase of frequency*

3PL users think that the negotiation power of 3PL providers depends on the size of orders rather than frequency.

“...the bargaining power relies on the size of orders rather than frequency.”

“The ability of 3PL providers to reduce purchasing costs is not related to the frequency of orders.”

One manager suggests that having the advantages of negotiation power requires 3PL providers to have reasonable size orders; do not need to place an order every day.

“3PL providers may consolidate end-users’ orders into one large size order. Whether it is weekly orders, the demand is still the same... I could not see how it [an increase of frequency] could increase buying power of 3PL providers.”

*Summary*

The hypothesis H3b is not supported by the findings of the survey data. The monthly orders would be more practical for 3PL users since they may have monthly planning and the outsourced products are non-critical items. The costs to monitor purchasing activities are not high because the monthly planning does not require frequently tracking the purchasing performance of 3PL providers and outsourced products are not strategic items for 3PL users. 3PL users perceive that the bargaining power achieved by 3PL providers is related to the size of orders rather than order frequency. 3PL providers have to consolidate to achieve reasonably sized orders to increase its negotiation influence.

There is one interesting point that is not included in the model. The factor of transparency and visibility of purchase orders can influence the frequency of placing orders. If the whole purchasing process cannot be transparent to 3PL users, they may not be likely to place more orders. Therefore, 3PL providers may lose thousands of orders

#### **6.2.1.9 Transaction size – NZ 3PL users**

The relationship between transaction size and 3PP is not significant based on the findings of the survey data, which is consistent with Jack and Suri's (2011) findings. Some explanations can be found in the interview data.

##### *Large transaction size*

3PL users are not sure whether 3PL providers can establish the strengths of large transaction size at the current stage because most 3PL providers do not offer this service.

“I am not quite sure whether 3PL providers can create large transaction size at this stage.”

One manager believes that offering 3PP service increases commercial risks because 3PL providers take on the role of trader, and they have to ensure that all products can be sold. More out-of-date products may reduce the confidence of 3PL providers to implement 3PP service due to high inventory management costs. The ability of gathering purchase orders together and managing such risk performed by 3PL providers is not demonstrated yet.

“...it [offering 3PP service] increases commercial risk since 3PL providers play a role of trader, and they make sure that all imported products can be sold out. Also, the consolidation competence of 3PL providers is not seen to us.”

*Increase of aggregated orders*

Transaction costs for small orders tend to be more expensive, so 3PL users expect that their logistics providers can combine purchase orders in order to keep transaction costs low and to obtain more bargaining power. However, they have a concern of the level of competence of 3PL providers to aggregate purchase orders.

“I have the same concern of the level of ability of 3PL providers to increasingly aggregate purchase orders.”

One manager indicates that 3PL providers need to continue optimizing the order size and, thereby, gain more leveraging power to bid cheap purchasing price. However, such ability is not shown.

“...this ability is not tested.”

*Summary*

The hypothesis H4b is not supported by the findings of the survey data. 3PL providers need to demonstrate their competence of creating large size orders, which is not shown to 3PL users yet. Moreover, 3PL users have the same concern whether 3PL providers are able to aggregate purchase orders together in order to gain more bargaining power.

**6.1.1.10 Value-to-client and benefit-to-provider– NZ 3PL users**

The relationships between 3PP and value-to-client, and 3PP and benefit-to-provider are significant. Some explanations can be found in the interview data.

Value-to-clients

3PL users show that they can obtain a cheap purchasing price and consolidation of freight.

“We could get cheap purchasing price and consolidation of freight and volume.”

One manager indicates that providing ‘one-stop’ service by 3PL providers can help the user manage the whole operations process and enable it to focus on its core business.

“We can manage our whole operation process through using ‘one-stop’ service...we can focus on core business.”

Another manager expresses that the company is able to outsource non-critical activities to the logistics provider.

“...we still need someone who can help us manage the non-critical activities.”

Additionally, 3PL users do not need to worry about the constraint of cash flow for purchasing products. 3PL providers with strong financial strength can reduce the cash flow impact for their business.

“...increase our cash flow by using 3PP service.”

*Benefit to 3PL providers*

3PL users think that their logistics providers could increase their leveraging power through consolidating purchasing orders. This would give the logistics providers more confidence to push reduced for purchasing price.

“...they [3PL providers] have more leverage power to reduce purchasing price.”

One informant expresses that 3PL providers can charge for such value-added service in order to make more profit.

“They charge some margins for 3PP service.”

3PL providers are able to integrate their current business through implementation of 3PP service. More 3PL users would stick around to use the service offered by their 3PL providers. 4PL\* will become a key strategy performed by the current logistics providers.

“I think that they [3PL providers] can integrate their business and attract more customers to use their service... 4PL becomes available, and can do it anyway.”

A lot of 3PL providers do not offer this service, so they can extend into new markets for sustainable growth.

---

\* Fourth party logistics provider

“Many 3PL companies do not provide this service, I think that they can move into this new market and get more profits.”

Summary

The hypotheses of H5b and H6b are supported by the findings of the survey data. 3PL users think that they can get cheap purchasing price, consolidation of freight, smooth cash flow, and focus on their core business.

3PL users perceive that their 3PL providers can have more leveraging power to get purchasing price downwards. Offering value-added service can make more profits for 3PL providers. 4PL will be a major strategy implemented by the logistics providers. In addition, the 3PL provider can extend the new market and gain sustainable competitive advantages.

## 6.2.2 Strengths and limitations to offering 3PP services

### 6.2.2.1 Perceptions from NZ 3PL providers

#### *Strengths for implementation 3PP services perceived by New Zealand 3PL providers*

Table 6-9 illustrates the survey's results about the strong points for implementation of 3PP services perceived by New Zealand 3PL providers. The majority of respondents indicate that offering 3PP service can help them improve the levels of customer service they offer (82.89%), and help 3PL users focus on core activities (82.89%). Additionally, reducing purchasing costs (80.48%) is another key strong point perceived by New Zealand 3PL providers.

Factor	Percentage
Purchasing cost reduction for your customer	80.48
Improving your customer service	82.89
Help your customer focus on core activities	82.89

**Table 6-9: Strengths for implementation of 3PP services perceived by New Zealand 3PL providers**

According to the interview data, there are three major strengths for implementation of 3PP services by New Zealand 3PL providers, mentioned by these providers. They are: cost/benefit, delivering products on time, and providing an efficient ordering process. 3PL providers have abilities to consolidate small orders together in order to achieve the target of low purchasing cost. Having strong physical infrastructure can make sure that they can deliver the purchasing orders on time, and 3PL providers are able to offer the efficient purchasing process for their customers.

In addition, there are some more points regarding the strengths for offering 3PP service mentioned by the respondents.

- Ability to aggregate the volume of small orders
- Worldwide branches
- Offering integrated management system
- Strong financial strengths

- Having strong basic service, such as transportation and warehousing
- The ability to develop greater knowledge of global supply chain
- Offering additional services to customers
- Flexibility to respond to market change

Limitations of implementation of 3PP service perceived by New Zealand 3PL providers

Based on the results of the survey, table 6-10 shows the limitations of offering 3PP services perceived by New Zealand 3PL providers. The major limitation for New Zealand 3PL providers is lack of purchasing expertise (53.67%). The second limitation is lack of capital (50.20%), and the next one is lack of purchasing technology (45.41%).

Factor	Percentage
Lack of capital	50.20
Lack of purchasing technology	45.41
Lack of purchasing expertise	53.67

**Table 6-10: Limitations of implementation of 3PP services perceived by New Zealand 3PL providers**

Most interviewees frequently mention that the major limitation is lack of purchasing experts, and risk of debt. At present, most 3PL providers do not include 3PP service, so they may not have purchasing experts. The risk of debt may refer to those small local customers who are not able to pay 3PL providers.

Moreover, there are other proposed limitations on implementation of 3PP service perceived by New Zealand 3PL providers.

- Risk to take the ownership of products
- Ability of leveraging contracts in suppliers
- The willingness of customers to relinquish their responsibility of purchasing

### 6.2.2.2 Perceptions from NZ 3PL users

#### Strengths for implementation of 3PP services by 3PL providers, perceived by New Zealand 3PL users

According to the survey's results, table 6-11 shows the strong points for implementation of 3PP services perceived by New Zealand 3PL users. Most informants indicate that using 3PP service offered by 3PL providers can help them reduce purchasing costs (82.82%), focus on core activities (80.37%), and improve customer service (77.91%).

Factor	Percentage
Purchasing cost reduction	82.82
Improved customer service	77.91
Focus on core activities	80.37

**Table 6-11: Strengths for implementation of 3PP services by 3PL providers, perceived by New Zealand 3PL users**

Based on the interview data, the most frequent points related to the strengths of 3PL providers to offer 3PP service perceived by 3PL users include aggregating purchasing volumes, cost savings, having domestic and international distribution networks, and expertise in logistics. 3PL providers have abilities to consolidate purchase orders through using the advantages of their distribution networks. They can efficiently collect the purchase orders and distribute them to their customers based on their logistics expertise. Having more consolidated orders can increase the negotiation power of 3PL providers to reduce purchasing costs. Additionally, some informants mention other points associated with the strengths of 3PL providers. They are:

- Maximizing truck loadings by 3PL providers through consolidation
- Ability to encourage more companies to join together for purchasing
- Good for stock management
- Doing well in catalogue service
- International freight forwarding service

*Limitations of implementation of 3PP service perceived by New Zealand 3PL users*

Based on the table 6-12, most informants perceive that the major limitation is lack of purchasing expertise (49.46%) and lack of purchasing technology (47.75%).

<b>Factor</b>	<b>Percentage</b>
Lack of purchasing technology	47.75
Lack of purchasing expertise	49.46

**Table 6-12: Limitations on implementation of 3PP services perceived by New Zealand 3PL users**

According to the interview data, most informants indicate that the major limitations for 3PL providers to offer 3PP service include lack of experience to negotiate purchasing price with suppliers, lack of in-depth relationships with suppliers, and lack of product and industry knowledge. Presently, most 3PL providers do not offer 3PP service. They may not have sufficient experience to deal with purchasing price with suppliers since they may not maintain in-depth relationships with suppliers. Also, most logistics providers focus on transportation and warehousing, so they may lack professional knowledge regarding the attributes of products and the characteristics for a particular industry, such as the pharmaceutical industry.

There are other points mentioned by the informants. They are:

- Unfamiliar with regulatory environment in different countries and regions
- Lack of providers' own purchasing system

### **6.2.3 The ways to offer 3PP service**

The interviewed respondents indicate some possible methods to offer 3PP service. Some points have already been mentioned by the Chinese respondents; the researcher still lists all of them to give a full picture of how to offer 3PP service perceived by New Zealand respondents.

#### **6.2.3.1 Perceptions from NZ 3PL providers**

##### Standardized and customized services

Purchasing services could be divided into two categories. One is the standardized products, and another is customized products. For standardized products, it is easy for 3PL providers to consolidate orders for similar products. For the customized products, they need to require a minimum order to cover the basic costs.

##### Demonstration of purchasing ability to customers

3PL providers should prove their value for offering purchasing certainty, expertise for purchase order management and transportation management, and ability to get pure cost reduction in terms of per unit of purchasing price. Particularly, the logistics providers need to understand the purchasing volumes of their customers. Offering the services of market surveys, Request for Information, and Request for Proposal helps their customers simplify the purchasing procedures.

##### Planning the rules for purchasing process

3PL providers may need to smooth out their supply chains, so they need to plan their own purchasing rules for consolidating purchasing orders. For instance, the logistics company may have a rule of shipping consolidated orders once a week.

### Adding purchasing function to warehousing management system

3PL providers may implement the purchasing functions based on their current warehousing management system. Replenishment-based forecasting may be a possible way to achieve this target. The purchasing criteria have been set by both 3PL providers and users. Thereby, 3PL providers will find it easy to start including the purchasing function for their existing customers. Also, the logistics companies will be quite keen to offer the purchasing services if their customers approach the logistics companies regarding this new service.

### Introducing 3PP services to the current customers

3PL providers may first opt for introducing new services to the existing customers. If they like to use this new service, 3PL providers can extend the range of this service to other customers based on their historical experience.

### Offering 3PP service in a particular industry

3PL providers may try to offer purchasing services in one or two industries, such as FMCG and grocery products. Then, 3PL providers may examine and see the market response to determine the next plan.

### Minimising internal costs before implementing 3PP service

3PL providers need to check the current inventory space, available labour, amount of hired equipment, and compatibility of IT systems in order to better offer 3PP service. Those four components are major sources of costs. Trying to minimise those costs enables 3PL providers to have better profit margins from this service.

### **6.2.3.2 Perceptions from NZ 3PL users**

#### Dividing purchasing service

It is quite important for the logistics providers to match the needs of their customers. The actual sourcing to identify the suppliers and negotiate with suppliers can be initiated by 3PL providers. The 3PL providers can divide the purchasing service into small parts, like sourcing, negotiation, importation, order tracking, documentation, payment, transportation, etc. Based on individual needs, 3PL users can choose their own required parts, which increase the flexibility for 3PL providers to meet customers' needs.

#### Demonstrating 3PL performance

The use of 3PP service by 3PL users would depend on how good their logistics providers are at purchasing. The logistics providers have to set up Key Performance Indicators (KPIs) to measure their purchasing services, such as order fulfill rate, delivery on time, correct purchase order quantity, purchase cost, supplier rating, cost of purchasing units, and so forth.

#### Guarantee of quality

3PL providers should guarantee low purchasing price and the quality of service. They need to guarantee that customers' purchase orders will be delivered at the right time with low purchasing price compared to that of market price. The current systems have to support online ordering, tracking the status of purchased orders, and online payments. For instance, they may have an online shop through integrating their current logistics systems with purchasing service. The integrated service would be an advantage for them because they easily introduce and promote this new service to their current and potential customers.

### Reducing minimum order quantities

A single 3PL user may be required to place a certain amount of order quantities (minimum orders) with suppliers (e.g. manufacturers). However, the 3PL user may not be able to quickly move those products. It is possible for 3PL providers to achieve minimum order quantities though consolidating orders from other customers. 3PL users would have less pressure on cash flow and make more money by improving its core competence. Flexibility to meet customer's requirements is a significant advantage for 3PL providers to implement 3PP service. 3PL users can choose their types and quantities of orders based on their individual situations.

### Strategic plan for implementation of 3PP service

According to different situations and resource availability for 3PL providers, they need to identify the potential markets for purchasing, and have a detailed plan how they are going to offer 3PP service. This is quite an important stage for them to consider before moving to the execution procedure. For instance, a 3PL provider may identify a particular industry, e.g. FMCG industry, to test the market demand. If 3PL users really receive the benefits from using this service, they will be keen for their logistics providers to continue to provide this service.

#### **6.2.3.3 Additional information related to offering 3PP service**

##### *New Zealand 3PL providers*

Table 6-13 illustrates the important reasons that 3PL users will want to use 3PP services, perceived by New Zealand 3PL providers. Workforce reduction (65.06%), trustworthy (62.05%), and economics benefits (62.05%) are the three most important reasons to offer 3PP services perceived by 3PL providers.

Reason	Percentage
Your organization is trustworthy	62.05
Your organization has a strong reputation	59.64
Your organization improves competitive market position	57.83
Your organization receives economic benefits	62.05
Your organization helps customers achieve workforce cost reductions	65.06

**Table 6-13: Reasons that 3PL users will want to use 3PP services, perceived by New Zealand 3PL providers**

Table 6-14 shows the important criteria for the Request for Proposal (RfP) process perceived by 3PL providers. The quality of management (65.06%), financial strengths (63.25%), and information system capabilities (61.45%) are the three most important criteria for the RfP process, perceived by 3PL providers.

Criteria	Percentage
Price	60.24
Capacity	60.24
Financial strength	63.25
The quality of the management	65.06
Information system capabilities	61.45

**Table 6-14: Criteria to assess the Request for Proposal (RfP) process perceived by New Zealand 3PL providers**

*New Zealand 3PL users*

Table 6-15 shows the influences for outsourcing purchasing decisions perceived by New Zealand 3PL users. Receiving economic benefits (77.30%), trustworthy 3PL providers (76.07%), and having strong reputation by 3PL providers (74.23%) are the three most important influences on outsourcing purchasing decisions perceived by 3PL users.

Reason	Percentage
Your 3PL provider is trustworthy	76.07
Your 3PL provider has a strong reputation	74.23
Your 3PL provider improves your competitive market position	73.62
Your 3PL provider offers economic benefits to you	77.30
Your 3PL provider helps you achieve workforce cost reductions	66.87

**Table 6-15: Influences for outsourcing purchasing decisions perceived by New Zealand 3PL users**

Table 6-16 illustrates the importance of information obtained from RfP. Based on the results of survey, information system capabilities of 3PL providers (79.14%), price (78.53%), and financial strengths of 3PL providers (76.87%) are the three most important variables rated by 3PL users.

Criteria	Percentage
Price	78.53
Capacity	71.44
Financial strength of your 3PL provider	76.87
The quality of the management of your 3PL provider	73.62
Information system capabilities of your 3PL provider	79.14

**Table 6-16: The importance of information obtained from Request for Proposal (RfP) perceived by New Zealand 3PL users**

## **6.2.4 Benefits of offering or using 3PP service**

### **6.2.4.1 Value-to-client perceived by NZ 3PL providers**

The majority of 3PL providers indicate that the crucial benefits to their clients include cost savings, quality assurance, focus on core competence, and least stock holding. 3PL providers having strong facilities and global networks can ensure the quality of purchased products. Outsourcing the purchasing function to 3PL providers can help 3PL users focus on their core competence. 3PL users do not need to have much more inventory on hand in order to meet uncertain market demand because 3PL providers can help them look after their inventory and reduce their cost of storage.

In addition, the respondents also mention other values for their clients through using 3PP service. They are:

- Offering integrated services
- Search for supplier cost reduction
- No need to deal with multiple suppliers offshore
- Certainty and security
- Professional procurement service leading to improved logistics service
- Fast freight
- Administrative cost reduction
- More efficient ordering
- Reducing the need for in-house purchasing expertise
- Using advanced technology
- Direct financial benefit
- Streamline of supply chains
- Fast speed to the markets
- No issue of responsibility for stock, such as insurance

### **6.2.4.2 Benefit-to-provider perceived by NZ 3PL providers**

Most informants believe that 3PL providers can receive the benefits of increasing profits, extending a new market, strengthening customer loyalty, and being more involved with customers. Offering 3PP service as a value-added service can help 3PL providers increase their profits. Price is not their only competitive weapon. Presently,

most 3PL providers do not enter into this market, so offering 3PP service enables 3PL providers to extend into an open market. The customer loyalty for 3PL providers can be improved though implementing 'one-stop' service, from procurement and warehousing, to transportation. Also, 3PL providers are able to attract more customers to be involved in order to increase their profits.

Additionally, there are some other benefits for 3PL providers mentioned by the informants.

- Growing market share
- Having more close relationships with customers
- Maximally using facility space
- Having additional service fees
- International freight and warehousing
- Having more ability to lock in customers

#### **6.2.4.3 Value-to-client perceived by NZ 3PL users**

Many informants are looking for cheap purchasing price, consolidated delivery and outsourcing of non-core business. 3PL users can achieve low purchasing price since their logistics providers can exert large purchasing power to get the purchasing price downwards. Also, 3PL users can share the providers' transportation capacity since a single company, like an SME, may still need to pay full price for the whole container although it could not use the full capacity. Consolidated delivery enables 3PL users to share the transportation capacity with low costs. Using 3PP service helps 3PL users focus on their core competence and improve their customer service levels.

There are other points mentioned by the informants. They are:

- Volume aggregation
- Improved cash flow
- 'One-stop' service
- Reducing purchasing costs

#### **6.2.4.4 Benefit-to-provider perceived by NZ 3PL users**

There are two points mentioned by most informants: receiving improved margins from value-added services and maximally using the capacity of freight and warehousing. 3PL users believe that their logistics providers can receive additional profits through implementing value-added services. Consolidating purchasing orders together can increasingly utilize the capacity of their transportation and warehousing in order to reduce their operational costs.

Some informants mention other points. They are:

- Gaining leverage power
- Offering integrated businesses
- Becoming a 4PL
- Able to attract more customers

## **6.2.5 Overall perceptions of implementation of 3PP service**

This section discusses the overall perception of implementation of 3PP service perceived by New Zealand 3PL providers and users

### **6.2.5.1 Perceptions from the perspective of NZ 3PL providers**

Most informants positively indicate that SMEs are likely to benefit from 3PP service. Given the small purchasing quantity and bargaining power of SMEs, 3PL providers, as third party purchaser, can get cheap price through consolidating individual and small purchase orders.

Two informants indicate that small customers may not be likely to use this new service because they want to control purchasing services as much as possible. For the medium-size companies, they are highly likely to use this service since they want to get a competitive edge, save costs, minimise labour costs, focus on core business, and reduce purchasing risk.

One informant expresses an interesting point. Regarding the import market, SMEs will definitely use this service. However, the export market presents a different equation. Most exporting from New Zealand is done by large companies and most of these prefer running their own shipping departments and documentation departments. Exporting in New Zealand is quite competitive trying to serve the rest of the world because the country is so remote. 3PL providers have to be price competitive, service competitive, and quality assurance competitive. Quality assurance means that documents provided to 3PL customers are always correct. Exporters prefer running their own shipping documentation to make that difference on the service levels. Otherwise, they could lose their business.

“For instance, 50% or 80% of all cargos coming into the country will be carried by 3PL providers. Exports by 3PL providers could be probably around 20%.”

Most 3PL providers believe that they will consider offering 3PP service in the near future and the concept of group purchasing organization can be successfully

implemented. Currently, the 3PL markets in New Zealand are very competitive, and most 3PL informants want to extend their markets. It is easy for them to set up the process of placing orders to suppliers and receiving goods based on international networks. In fact, 3PL providers need partners from overseas because they provide international freight forwarding services. It is very significant for 3PL providers to link with overseas partners.

A few informants indicate that the New Zealand market for 3PP service needs to take some time to mature. The informants think that they are not operating efficiently at what they are currently doing. They need to get that right before they tackle something else; so they have to focus on their current businesses. One informant states that the government may need to draft relevant policies and laws to make sure that offering 3PP service by 3PL providers can be successfully implemented.

#### **6.2.5.2 Perceptions from the perspective of NZ 3PL users**

The majority of informants show that they are interested in using 3PP service. Some informants suggest that their companies need to source raw materials offshore. Potentially, they think that the associated activities of purchasing and negotiation can move to 3PL providers. Also, consolidation of freight would save them more operational costs. A single 3PL user does not have big buying power, so its logistics provider can offer 'one-stop' service, such as purchasing, tracking, warehousing, and transportation. 3PL users may rely on their logistics providers' understanding of the markets and costs.

One informant has a neutral position regarding 3PP service. The informant points out that implementation of 3PP service depends on 3PL providers demonstrating benefits to 3PL users. It is quite important for 3PL users to see the real benefits before signing up for this new service.

All informants agree that the concept of 3PP services implemented by 3PL providers can be successful. 3PL providers can aggregate orders from multiple users and offer integrated services to them. Also, the logistics companies can deal with negotiation and contracting with suppliers, and get cheap prices on behalf of their customers.

Presently, a lot of business tends to be using this. Combining buying power would be advantageous for 3PL providers in obtaining low purchasing costs and locking in more customers. 3PL providers have to offer the right systems, the right people, and the right contacts for outsourcing markets. Thereby, the implementation of 3PP services can bring mutual benefits for 3PL providers and users.

The informants suggest two points that are needed to be considered by 3PL providers. First, 3PL providers may need to expand the current contacts in other markets since global sourcing requires them to have more relationships and contacts in different regions. Second, 3PL providers have to demonstrate their abilities to get large purchasing scale and order quantity. This is very important before launching 3PP service.

## **6.3 Chapter Conclusion**

This section mainly summarizes the key points of findings from China and New Zealand.

### **6.3.1 Hypotheses**

The findings of hypothesized relationships (asset specificity, uncertainty, frequency, transaction size, 3PP services, value-to-client, and benefit-to-provider) from the samples of China and New Zealand are the same.

#### **6.3.1.1 Asset specificity – 3PL providers**

The relationship between asset specificity and 3PP is not significant. For 3PL respondents from both countries, most of them do not think that the logistics companies need to invest huge funds and resources on 3PP service dedicated to the customers. These are not non-deployable assets. The Chinese respondents indicate that they can get the professionals from labour markets, head-hunting companies, or human resource pools. Some New Zealand informants state that the purchasing professionals can come from 3PL customer companies. Alternatively, they can come from official 3PL company websites and job fairs. The logistics providers help 3PL users develop their core competence because their customers would not need to prepare to negotiate with overseas suppliers and distributors. In fact, purchasing is a quite complex process since purchasing and collaboration need to be considered together. The logistics providers not only pursue the maximum profits, and also offer financial benefits for other supply chain partners. Offering 3PP service would not require 3PL providers to invest in large non-deployable assets.

Most respondents from both countries believe that additional investments in the resources of improving logistics facilities are not necessary. The current logistics infrastructure is quite mature and offering 3PP service can help 3PL providers maximally utilize the capacity of their warehouse and transportation. The logistics providers have adequate physical facilities in order to meet the growing demand of purchasing. Some large Chinese 3PL providers who obtain advantages of national networks, advanced technology, and sufficient financial strengths have high credibility in the logistics industry. New Zealand logistics providers think that it is not

costly for them to fulfil the purchasing function. Some logistics companies have advanced logistics systems to replenish products. Their customers can place purchase orders based on their business requirements through using the systems.

The investment in leveraging the purchase function to build relationships with the customers is not necessary since 3PL providers from both countries indicate that they have well established interpersonal relationships with the customers, and they do not need to invest additional efforts to coordinate relationships with their customers. The logistics providers are able to better understand their customers' purchasing structure. Some Chinese logistics companies have built partnerships with their 3PL users. Additional investments on improving the relationships with the customers are not necessary. They can combine some current services to add 3PP service as a whole pack of services. Some New Zealand informants indicate that they have reliable relationships with their customers. Having a high level of trust foundation makes it easy for 3PL providers to introduce 3PP service to their customers since 3PL providers are able to have more chances to do business with them. In addition, 3PL providers in both countries can understand the purchasing requirements of their customers' normal routines, such as the types and volumes of purchased products, and those people are the first group to introduce 3PP service to.

#### **6.3.1.2 Uncertainty – 3PL providers**

Uncertainty has a significant influence on 3PP service. The demand for outsourcing purchasing service is not significantly changed. Chinese respondents perceive that 3PL users clearly understand the type and volume of products outsourced to 3PL providers. Normally, they place similar orders based on the relatively stable volume of production and demand. New Zealand informants believe that their customers continue to place similar amounts of purchase orders since their customers do not want to change their orders all the time. The strengths of the logistics providers include size, scale, and flexibility, so the logistics companies are able to bring more business opportunities for the customers, and their customers would be keen to stay with their logistics service providers. It is possible for the customers to constantly use this new service. The purchasing performance by 3PL providers would be transparent to their customers. Offering integrated purchasing services would enable 3PL users to

see the whole process from order placement to final delivery. Actually, 3PL users may determine their logistics service provider, so 3PL providers have to explicitly expose the information of purchasing performance to their customers for evaluation. The communication platform between two parties would be direct and unblocked.

Most logistics respondents express that different logistics companies focus on different markets, thus, they are still able to receive return of value. Chinese respondents indicate that 3PL providers having strong financial competence and global logistics networks, so those small- and medium- sized logistics providers find it difficult to enter into the markets for offering international sourcing service. Also, the logistics providers who offer 3PP service would obtain first-mover advantage, and are able to have ability of price making. They believe that they can sustainably get expected return of value. New Zealand informants express that most of New Zealand logistics companies focus on basic services. There are only a few competitors that could enter into the 3PP market since it is very specialized. For instance, a 3PL provider is specialized in handling sea food or frozen products. Also, 3PL users would choose their logistics service providers based on their own situations and requirements of their business growth, so the overall competition is not very worrisome.

3PL providers would expect to offer purchasing services for a long period as offering 3PP service would help them increase profits and enhance the efficiency of using their current logistics facilities. Chinese respondents express that the overall trends of customer's orders would be stable because the customers are able to estimate reliable purchasing volumes annually. Most 3PL users may understand the percentage of outsourced purchasing so the change of customer orders would not fluctuate significantly. New Zealand informants indicate that the size of New Zealand's market is small, so the change of customers' orders would not be significant. The characteristics of New Zealand customers would regularly buy for certain slices of the markets because they do not want to have more inventories. 3PL providers are able to continuously offer 3PP service since the demand would not be changed significantly in New Zealand based on a certain amount of populations.

### **6.3.1.3 Frequency – 3PL providers**

The relationship between frequency and 3PP is significant. Most respondents from both countries expect to receive weekly orders so that they are able to enhance their forecasting accuracy. Also it is easy for them to plan purchasing volume and efficiently control transportation capacity and inventory levels. The order frequency would impact on the value of products ordered, including the lead time from placing an order to receiving it, safety stock, and transportation costs.

3PL users may have high frequency of purchase orders due to limited order quantity and negotiation power. With an increase of their demand for outsourcing purchasing, the order quantity increases dramatically, so the fixed cost per transaction can be reduced. Chinese respondents indicate that consolidating each small order from 3PL users can reduce the fixed costs per transaction since it increases the efficiency of using fixed-assets. 3PL users may face the issue of financial constraints, so using 3PP service can help them reduce their administration costs and purchasing costs. New Zealand informants express that 3PL users may not have much more buying power and they may shorten their order periods. It is possible for 3PL providers to reduce fixed costs per transaction due to high frequency of placing orders.

3PL providers can have purchasing volumes in order to obtain more bargaining power through increasing order frequency. Chinese respondents indicate that based on the stable purchasing volume, 3PL providers would have more confidence to negotiate a good price and increase their flexibility for bidding. New Zealand informants think that consolidating customers' orders would provide the big orders needed for leverage, and enable them to get reasonable price for their customers.

### **6.3.1.4 Transaction size – 3PL providers**

Transaction size and 3PP have a significant relationship. Large transaction size would give higher priority for 3PL providers in the negotiation process. 3PL providers would have large negotiation power to minimise the purchasing costs and have more forces to influence supplier's behaviours. Chinese respondents believe that they become "price maker" rather than "price taker". Also, large transaction size would get more bank credits to solve the financing issues. The strong financial ability of 3PL

providers would attract more 3PL users to use 3PP service. New Zealand informants indicate that large transaction size would obtain the benefits of economies of scale for the purchase orders. It is certain that size creates pressures on price. Having large transaction size would help 3PL providers to have the advantages of purchasing volumes.

The aggregated orders can increase 3PL provider's confidence to reduce the purchasing price. 3PL providers are able to leverage time for better controlling resources. Chinese respondents think that using aggregated orders can increase the possibilities of bargaining cheap purchasing price. Quickly consolidating purchase orders increases the flexibility of 3PL providers to meet market demand. 3PL providers can get a clear idea regarding the purchasing volume for each type of product, and then, they are able to place large size orders to suppliers and increase their bargaining power with suppliers. New Zealand informants state that aggregating purchase orders is not a problem for them since they can understand the past routine process of their customers and easily combine their orders together in order to get cheap purchasing price. The aggregated orders are a big advantage for 3PL providers to reduce the purchasing price.

#### **6.3.1.5 Value-to-client and benefit-to-provider – 3PL providers**

The relationships between 3PP and value-to-client, and 3PP and benefit-to-provider are significant. The respondents from both countries believe that they can help 3PL users focus on their core competence, minimise purchasing risks, and reduce purchasing costs. The global and domestic sourcing by 3PL providers would help them minimise concerns about purchasing and logistics costs. The activities of quality check and order processing can be outsourced to 3PL providers.

3PL providers can keep customer loyalty and gain additional profits though offering 3PP service. They believe that offering 3PP service can increase revenue and maintain their competitive market positions in the field of logistics. The 3PP service helps 3PL providers enhance their reputations, so they can keep the customers for a long-term.

#### **6.3.1.6 Asset specificity – 3PL users**

Asset specificity and 3PP do not have a significant relationship. Most respondents from both countries think that recruiting purchasing experts is not a big issue for their logistics providers because they can get them from human resource agents and job markets. Chinese respondents indicate that based on high reputation in the logistics industry, 3PL providers would easily find the suitable purchasing experts from talent markets. New Zealand informants think that a more economical way to obtain the qualified purchasing experts for 3PL providers is from human resource professional websites. Alternatively, 3PL providers may consider recruiting purchasing professionals from 3PL users' companies, so they do not need to invest large funds in recruiting purchasing experts.

The current basic infrastructure of 3PL providers would be sufficient to offer 3PP service, so there is no need for them to put additional investments on this. Most 3PL providers would obtain advanced logistics technology, modern warehousing systems, and efficient transportation fleets. Chinese respondents state that putting additional investments on improvement of current physical facilities by 3PL providers is not necessary, such as building a new warehouse. Offering the integration of purchasing and logistics technology would not cost too much since it only needs to add the purchasing function in the current systems. New Zealand informants indicate that 3PL providers do not need to upgrade the current facilities. Exchanging virtual information would be more convenient for both 3PL providers and users.

The contractual relationship between 3PL providers and users can meet the 3PL users' requirements, and such relationship is stable. Most outsourced products to 3PL providers would not be critical components for 3PL users' business, so there are no need additional investments to improve the current relationships. Also, outsourcing non-critical components to 3PL providers would not affect 3PL users' competitive positions, so 3PL users do not need to spend a lot of time and effort in outsourcing the purchasing function, and the associated transaction costs would not be very high. Chinese respondents indicate that there is a stable relationship for both parties since 3PL providers help their customers ensure the quality of products to meet customers' standards and deliver the products at the right time. Exchanging information between 3PL providers and users enables 3PL providers to understand the users' working

procedure, purchasing demand, and quickly respond to users' needs without additional investments. New Zealand informants express that the relationship with 3PL providers is quite good. 3PL providers can understand what their customers need, and accurately offer the service to 3PL users.

#### **6.3.1.7 Uncertainty – 3PL users**

The relationship between uncertainty and 3PP is significant. The demand for 3PP service would not be likely to change significantly since 3PL users may not easily change their purchasing plan, and know the volumes they would like to outsource. Chinese respondents think that the outsourced products to 3PL providers are not core products, such as consumable or maintenance materials. 3PL users are able to get accurate figures for spending on these items. New Zealand informants state that 3PL users would like to share some forecasting data and purchasing volumes information with 3PL providers. The annual demand would not be significantly changed since 3PL users conduct the demand forecasts in the next few years.

3PL users show that using 3PP services can help them achieve the goal of purchasing cost reduction and minimum operational costs. Also, 3PL providers can make sure that the quality of purchased products meets the customers' standard in order to satisfy their needs. Chinese respondents express that outsourcing non-critical products to 3PL providers can help 3PL users focus on their core business, and relieve their pressure to hold high inventory of non-critical products in the users' warehouse. New Zealand informants think that 3PL providers would help them control the progress of purchasing in order to various benefits of using 3PP service, such as low purchasing cost and administration cost reduction. Also, 3PL providers would help their customers to conduct international sourcing and obtain best price for purchasing, based on the customers' requirements.

The size of orders would be constant since 3PL users need to rely on the purchasing plan to place the orders. Chinese respondents indicate that they may place similar and small orders for each time since they are able to easily manage their inventory levels. New Zealand informants think that the whole size of New Zealand market is rather small, so the change of orders is not significant.

#### **6.3.1.8 Frequency – 3PL users**

The relationship between frequency and 3PP is not significant. The majority of user respondents from both countries think that the monthly orders would be preferred since they may need a certain level of inventory to meet uncertain demand and are more flexible to respond to market change.

The outsourced purchasing products are not core products, 3PL users do not need to spend more time and costs to monitor the purchasing activities. Chinese respondents state that they are interested in the purchasing price rather than the whole progress of purchasing activities. It is not necessary for them to increase costs to monitor the purchasing activities. New Zealand informants think that they do not need to increase costs to monitor purchasing activities since they do planning for each month.

3PL users from both countries perceive that the negotiation power achieved by 3PL providers is related to the size of orders rather than order frequency, so 3PL providers may be interested in the purchasing volumes rather than frequency.

#### **6.3.1.9 Transaction size\* – 3PL users**

The relationship between transaction size and 3PP is not significant. Most respondents from both countries have a concern of consolidating ability performed by 3PL providers since most 3PL providers do not include 3PP services, and need to prove their ability to create large size orders. Chinese respondents state that 3PL providers may not have historical experience to offer 3PP service since they mainly focus on transportation and warehousing services. Ideally, the large transaction size gives more negotiation power to 3PL providers. However, the ability to find a balance point of negotiation performed by 3PL providers is an issue perceived by 3PL users. The benefits of using 3PP services for 3PL users are not visible yet. New Zealand informants indicate that offering 3PP service may increase commercial risks since 3PL providers play the role of trader, and they need to ensure that all products can be sold. The ability of consolidating orders together and mitigating such risk performed by 3PL providers is not demonstrated yet.

---

\* Regarding to questions 4 and 5 in the survey, these two questions mainly deal with the profiles of firm size for 3PL providers and users. In fact, this research primarily focuses on the effect of transaction size on 3PP service based on TCA. Probably, the future research would explore the impact of firm size factor may influence on 3PP service.

It is critical whether 3PL providers may use the advantages of networking to consolidate purchase orders together. 3PL users may not see such ability of 3PL providers to get large sustained similar orders from 3PL users in order to negotiate the price downwards. Chinese respondents think that if 3PL providers could aggregate purchase orders in order to increase their negotiation power, they may have big power to influence purchasing price in terms of large purchasing quantities. However, 3PL users are not sure whether the logistics providers are equipped with such ability. New Zealand informants state that 3PL providers need to continue optimizing the order size and gain more leveraging power to bid cheap purchasing price. Nonetheless, 3PL users have a concern of their ability to aggregate purchase orders together and reduce purchasing costs. After all, this new service is not implemented in the real business.

#### **6.3.1.10 Value-to-client and benefit-to-provider – 3PL users**

The relationships between 3PP and value-to-client, and 3PP and benefit-to-provider are significant. 3PL users from both countries indicate that they can allay their financial pressures for purchasing, and get cheap purchasing price. Also, they can focus on improving their core competence. Initially, 3PL users may need to communicate with multiple suppliers, so the associated searching, negotiation, and decision costs would be high. Using 3PP service can reduce purchasing costs for them. 3PL users would not need to deal with the complicated purchasing processes since these activities can be outsourced to 3PL providers.

For their logistics providers, they perceive that 3PL providers can receive the benefits of increasing 3PL providers' revenues, extending into new businesses, and keeping customer loyalty. 3PL providers may offer 'one-stop' service and enhance their own brands in the markets, and obtain sustained competitive advantages. Also, 3PL providers can charge for 3PP service in order to make more profit.

#### **6.3.2 Strengths and limitations to offering 3PP services**

Chinese 3PL respondents indicate that the major strengths that support their offering 3PP services include domestic and international logistics networks, strong financial ability, offering 'all-in-one' standard logistics service and advanced capability of upgrading information systems. New Zealand 3PL providers believe that their main

strengths involve cost/benefit, delivering products on time, and providing an efficient ordering process.

The common limitation of offering 3PP services perceived by the respondents from both countries involves lack of purchasing experts. Chinese respondents also indicate that lack of familiarity with new suppliers is another limitation. New Zealand informants believe that the potential of user debt problems is another limitation.

The respondents from both countries' 3PL users commonly declare that having strong domestic and international networks is a key strength for their 3PL providers. Chinese respondents indicate that advanced logistics technology is another key strength for their logistics providers. New Zealand informants suggest that aggregating purchasing volumes, cost savings, and expertise in logistics are also strengths for their 3PL providers.

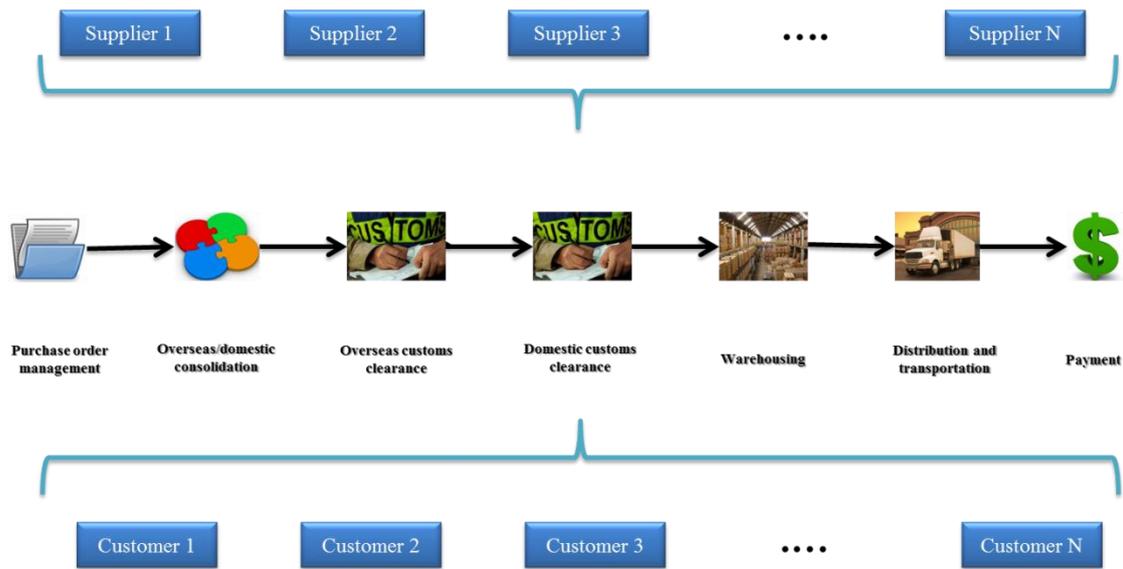
Lack of purchasing experts and lack of purchasing experience and knowledge are common limitations for 3PL providers perceived by both countries' 3PL users. Chinese respondents also mention that lack of a full standard return policy is another limitation for their logistics providers. New Zealand informants indicate that lack of in-depth relationships with suppliers is also a limitation for their 3PL providers.

### **6.3.3 The ways to offer 3PP service**

The most common methods to offer 3PP service perceived by 3PL providers include offering standardized and customized services, promoting 3PP services to the current customers, integrating purchasing and logistics platforms, and demonstrating leveraging ability to their customers. Chinese respondents also mention other possible ways to offer 3PP service, such as development of electronic commerce and ownership of products. New Zealand informants suggest that minimising internal costs before implementing 3PP service, offering 3PP service in a particular industry, and planning the rules for the purchasing process are possible precursors to implementing 3PP service.

3PL users from both countries indicate the common ways to offer 3PP service by their logistics providers involve dividing purchasing services, and clarifying the process of quality guarantee. Chinese respondents show other possible methods to offer 3PP

service by 3PL providers, such as financing service, building up professional purchasing team, and continuously improving customer service levels. New Zealand informants indicate that demonstrating 3PL performance, reducing minimum order quantities, and strategic plan for implementation of 3PP service are the possible ways to offer 3PP services by the logistics providers.



**Figure 6-1: Conceptual diagram for implementation of 3PP service\***

Figure 6-1 shows the conceptual diagram for implementation of 3PP service. 3PL providers can offer purchasing order (P/O) management services for raw materials and finished products for their overseas and domestic customers. Combining purchasing orders together can increase the bargaining power of the logistics providers with suppliers. Based on the large purchasing volumes, 3PL providers can get cheap purchasing price. Raw materials and finished goods can be delivered through the comprehensive global and domestic transportation networks.

\* This is a conceptual diagram for the implementation of 3PP service. The process shown in the diagram can be modified. For instance, if a manufacturer or retailer uses the system of vendor-managed inventory (VMI), the process can be changed as P/O management, overseas/domestic consolidation, overseas customs clearance, domestic customs clearance, warehousing, VMI, distribution and transportation, and payment.

The P/O management services can track the status of ordered products from the issuing date, check the progress of ordered products, and monitor and control transportation from suppliers. Also, 3PL providers can offer other benefit services:

- Import and export customs brokerage
- Freight consolidation
- Global sourcing and freight forwarding

In addition, 3PL users can receive more benefits from efficient customs clearance, low operational costs, quickly responding to market change, and helping them focus on their core businesses.

#### **6.3.4 Benefits of offering or using 3PP service**

Based on suggestions by 3PL respondents from both countries, the major values for 3PL users include focus on core competence, cost savings, and low purchasing price. The major benefits for 3PL providers involve obtaining additional profits, increasing customer loyalty, and extending into a new market.

For user respondents from both countries, the main values for them include cheap purchasing price, outsourcing non-core business, and administrative cost reduction. The primary benefits for their logistics providers involve receiving improved margins from value-added services, maximally using capacity of freight and warehousing, and keeping long-term relationships with customers.

#### **6.3.5 Overall perceptions of implementation of 3PP service**

Most 3PL respondents from both countries indicate that SMEs are highly likely to use 3PP service based on the cost driven. To overcome the small purchasing quantities and limited negotiation power of SMEs, the 3PL providers can get cheap price on behalf of their customers through consolidating purchase orders. They also present that they expect to successfully implement 3PP service. A extending new market would be a good option for them based on competitive markets in the logistics industry. In addition, 3PL providers can maximally use their capacity of logistics facilities, and reduce their operational costs though using integrated logistics systems.

Most 3PL users from both counties are interested in using 3PP service. They are able to enjoy ‘one-stop’ service offered by 3PL providers. They would not worry about the financial constraints, for purchasing and consolidation of freight can bring more operational cost saving. They think that the concept of 3PP services can be successfully implemented by their logistics providers because the providers would have more leveraging abilities to negotiate purchasing price downwards based on consolidating purchasing orders from multiple customers.

## **Chapter 7- Conclusion**

The last chapter is to summarize the key findings, to answer research questions, to reveal the theoretical contribution, indicate managerial implications, discuss the limitations of the research, and provide future directions for research.

### **7.1 Summary of key findings**

The main contribution of this research is answering the five research questions listed in the first chapter. This research looks at two countries – China and New Zealand – from two perspectives: 3PL providers and 3PL users. Thus, this paper summarizes the key points brought out for each trading platform from both perspectives, to answer the research questions.

#### **7.1.1 Research question one**

*What are the impacts of asset specificity, uncertainty, frequency and transaction size on the possibility of 3PL providers and users including third party purchase as a value-added service provided?*

##### *Asset specificity*

Based on the data from 3PL providers, no significant relationship between asset specificity and 3PP service was found. Most 3PL providers do not think that they need to have large investments on offering 3PP service. Their logistics facilities can meet the requirements of providing 3PP service. They have established good relationships with their customers, so there is no need to invest huge money on maintaining good relationships. They do not require investing substantial funds to recruit purchasing professionals since those people can come from job markets, human resource agents and their customers' companies. Less investing in asset specificity (non-deployable assets) can give more flexibility for 3PL providers to confidently bargain best price on behalf of their clients (Williamson, 1985). The 'hold-up' issue (Bengt and Roberts, 1998) is not a significant obstacle to prevent 3PL providers to offer this value added service.

Based on the data from 3PL users, no significant relationship between asset specificity and 3PP service was found. Most 3PL users do not think that their logistics providers need to invest more funds in the current infrastructure, such as physical warehousing and transportation fleet. 3PL providers can recruit purchasing professionals from job-search websites and professional headhunting companies, so the resources obtained from the market would not require 3PL providers to put in large investments. The current relationships with 3PL providers are stable and they believe that 3PL providers can meet their requirements, ensure the quality of products, and accurately fulfil their orders. The use of 3PP services by 3PL users is not significantly related to high investments by their logistics providers.

### Uncertainty

Based on the data from 3PL providers, a significant relationship between uncertainty and 3PP service was found. The market demand for outsourced purchasing service can be constant for a long period because 3PL providers think that their customers are able to understand the amount of purchasing required, and the customers regularly place a predictable amount of purchase orders (Ellram et al., 2008). 3PL providers believe that they are able to get return of value through offering 3PP services. It is difficult for small- and medium- sized logistics companies to enter into this market and to maintain a sustained competitive position. The service offered by 3PL providers needs to have strong financial support and international logistics networks. Offering 3PP service is very specialized and potential competitors focus on different markets, so there are minor overlapped areas for different logistics companies. The majority of 3PL providers show that most clients can understand the overall percent of purchasing products, so the change of their ordering pattern would not be significant. In New Zealand, the market change is not very fast based on the small population. 3PL providers are able to have high ability to forecast future purchasing demand (Williamson, 1985).

Based on the data from 3PL users, a significant relationship between uncertainty and 3PP service was found. The demand for outsourcing purchasing service does not have a significant threat of change because 3PL users cannot easily change their own purchasing plan and cycle time for sales. Using 3PP services helps 3PL users achieve

their various business goals, such as cost reduction, minimising operational costs, and focusing on core business. The size of purchase orders is not changed since Chinese 3PL users indicate that they rely on their purchasing plans to place an order and New Zealand 3PL users state that the size of markets is rather small.

### Frequency

Based on the data from 3PL providers, a significant relationship between frequency and 3PP service was found. 3PL providers expect that they are able to receive weekly or daily orders from their customers because it is easy to control and forecast purchase orders and most customers do not want to have high inventories. Consolidating purchase orders together can reduce the fixed cost per transaction and increase the efficiency of using fixed-assets. They also suggest that increase of frequency enables them to aggregate more orders, and have high purchasing power to negotiate purchasing price. When dealing with the same suppliers, such leveraging ability performed by 3PL providers is stronger when they conduct the recurrent transactions (Ellram and Billington, 2001).

Based on the data from 3PL users, no significant relationship between frequency and 3PP service was found. Most 3PL users express that monthly orders is practical since they want to order what they need and hold a certain inventory to meet uncertain market demand. Outsourced purchasing products are non-critical for them so they do not need to increase their costs to monitor purchasing activities. The increase of frequency cannot increase the purchasing power of their 3PL providers since they see that volume, not frequency, is the key to leverage.

### Transaction size

Based on the data from 3PL providers, a significant relationship between transaction size and 3PP service was found. The larger transaction size enables 3PL providers to have big power to bargain cheap price and reduce purchasing costs. They are also able to create aggregated orders. For customers with low purchasing demand, the 3PL provider needs to aggregate these small orders to increase the purchasing power and

provide more opportunities to get purchasing price downwards. Thus, the consolidated purchase orders can bring economies of scale of transactions (Williamson, 1985) for 3PL providers, and they can seek more benefits for their customers.

Based on the data from 3PL users, no significant relationship between transaction size and 3PP service was found. 3PL users think that their logistics providers have little historical experience of offering 3PP service, which creates a concern of the ability of 3PL providers to obtain large transaction size, by aggregating small orders, in order to increase negotiation power. Also, they are not sure whether their 3PL providers can find a balance point during the bargaining process in order to reduce purchasing costs. In addition, 3PL users have another concern of whether their logistics providers can use their advantages of distribution networks to consolidate purchase orders together with their leveraging ability to get purchasing price downwards.

### *Value-to-client*

3PL users are able to receive more benefits in the hybrid context that combines the structure of market and hierarchy (Williamson, 2008, 1985). Based on the data from 3PL providers, a significant relationship between 3PP service and value-to-client was found. Offering 3PP service helps 3PL users reduce purchasing costs, focus on core competence, and mitigate purchasing risk. Also, 3PL users do not need to deal with multiple suppliers offshore.

Based on the data from 3PL users, a significant relationship between 3PP service and value-to-client was found. 3PL users indicate that they are able to receive cost savings, and assurance of quality check for the purchased products.

### *Benefit-to-provider*

Based on the data from 3PL providers, a significant relationship between 3PP service and benefit-to-provider was found. Implementation of 3PP service allows 3PL providers to keep customer's loyalty, increase market share, obtain additional profits through offering value-added service to 3PL users, and maximally utilize their

capacity of warehousing and transportation. Some purchasing activities of 3PL users can transfer to the logistics providers (Nollet and Beaulieu, 2005). Thus, they are able to sustainably maintain their businesses.

Based on the data from 3PL users, a significant relationship between 3PP service and benefit-to-provider was found. 3PL users believe that their logistics providers can obtain the benefits of integrating their businesses, receiving improved profit margins, and continuously attracting customers.

### **7.1.2 Research question two**

*What are the strengths and limitations of 3PL providers to implement third party purchase service?*

According to the data from 3PL providers, the major strengths of 3PL providers to support offering 3PP service include:

- Domestic and international logistics networks
- Strong financial ability
- Offering ‘all-in-one’ standard logistics service
- Advanced capability of upgrading information systems
- Cost/benefits
- Delivering products on time
- Providing efficient ordering process

The main limitations to implement 3PP service perceived by 3PL providers involve:

- Lack of purchasing experts
- Lack of familiarity with new suppliers
- Risk of user debt burden

Based on the data from 3PL users, the major strengths of 3PL providers to support offering 3PP service include:

- Having strong national and international distribution networks
- Having advanced logistics technology
- Aggregating purchasing volumes
- Cost savings
- Expertise in logistics

According to 3PL users, the primary limitations for 3PL logistics providers wanting to offer 3PP service involve:

- Lack of purchasing experts
- Lack of purchasing experience and knowledge
- Lack of a full standard return policy
- Lack of in-depth relationships with suppliers

### **7.1.3 Research question three**

*How do 3PL providers add third party purchase as a value-added service?*

According to the data from 3PL providers, some possible ways to offer 3PP service by 3PL providers were presented. The following lists some major possibilities:

- Offering standardized and customized services
- Promoting 3PP services to the current customers
- Integrating purchasing and logistics platforms
- Demonstrating leveraging ability to 3PL customers

- Developing electronic commerce
- Taking ownership of products
- Minimising internal costs before implementing 3PP service
- Offering 3PP service in a particular industry
- Planning the rules for the purchasing process

In terms of the data from 3PL users, some possible methods to offer 3PP service implemented by 3PL logistics providers were presented by the users. The more significant opportunities are listed:

- Dividing purchasing services
- Clarifying the process of quality guarantee
- Offering financing service
- Building up professional purchasing team
- Continuously improving customer service levels
- Measuring 3PL performance
- Reducing minimum order quantities
- Strategic planning for implementation of 3PP service

### **7.1.4 Research question four**

*What are the values for 3PL users if the third party purchase service is offered by 3PL providers?*

According to the data, the major benefits for 3PL users to use 3PP service, perceived by 3PL providers, include:

- Focus on core competence
- Cost savings
- Low purchasing price

Based on the data from 3PL users, they perceive that the major values for them to use 3PP service involve:

- Cheap purchasing price
- Outsourcing non-core business
- Administrative cost reduction

#### **7.1.5 Research question five**

*What are the benefits for the 3PL providers if the third party purchase service is offered by them?*

According to the data, 3PL providers perceive that the major benefits from offering 3PP service include:

- Obtaining additional profits
- Increasing customer loyalty
- Extending a new market

Based on the data from 3PL users, they perceive that the main benefits to their logistics provider involve:

- Receiving improved margins from value-added services
- Maximally using capacity of freight and warehousing
- Keeping long-term relationships with customers

## 7.2 Theoretical contribution

First, from a theoretical standpoint, the transaction cost is a useful tool to determine ‘make’ or ‘buy’ decision (Anderson, 1985; Anderson & Schmittlein, 1984; John & Weitz, 1988; Levy, 1985; Maltz, 1993; Masten, 1984; Masten et al., 1991; Walker & Weber, 1984; Walker & Weber, 1987). TCA has not been applied earlier to assess outsourcing a vital function, such as procurement. This research has taken outsourcing to the next level, which is outsourcing a function to a third party (e.g. procurement). This research has findings from the possibility of both 3PL providers to offer such service and 3PL users to use such service, indicating that this is a new frontier worth exploring. Additionally, this research also uses the qualitative interviews to triangulate quantitative survey findings, though this method is not entirely new, it is done to obtain strong evidences for 3PP service.

Second, contributing to the hybrid institution for TCA theory, most literature demonstrates the choice of institutional structure (market or hierarchy) (Levy, 1985; Anderson, 1985; Heide and John, 1988; John and Weitz, 1988; Azoulay, 2000; Novak and Eppinger, 2001). Although some research discusses the hybrid institution, such as outsourcing (Masten et al., 1991; Poppo and Zenger, 1998; Verwaal et al., 2008, Maltz, 1993), most researchers would not include the transaction size as a determinant of TCA. Based on the TCA, the frequency and transaction size are two factors to determine the economies of scale of transactions. The costs of transaction-specific investments can be recovered by “large transactions of a recurring kind” (Williamson, 1985). Therefore, the transaction size as a factor to influence 3PP service is examined in this research. The economies of scale of transactions would be a key factor to influence the decision of offering or using 3PP services.

Third, traditionally, TCA deals with outsourcing decisions mainly determined by 3PL customers. However, this research discusses TCA from the perspective of 3PL providers as well, which is quite different from the traditional view. In fact, 3PL providers, as the main initiators, launch the service of third party purchase to 3PL users. Theoretically, it is proposed that the governance costs are mainly managed by 3PL providers due to having strong finance strength, ability to aggregate purchasing volumes, and advantages of traditional logistics services. The 3PL users (e.g. SMEs) may be deemed as an asymmetry position during the purchasing process because of

limited purchasing power, small purchasing volume and financial constraints. Therefore, 3PL providers would be the main drivers to make 3PP service a reality. Also, this study examines, using TCA, the perception of 3PL users regarding 3PP service.

Fourth, this research is quite important for China and New Zealand since both countries have bilateral trade agreements resulting in large volume of goods exchange between two countries. This is not only limited to the implementation of transportation and warehousing services by 3PL providers because the huge demand requires the 3PL operations to be more effective and efficient in both countries. Thus, 3PP is an alternative for 3PL providers and users in both China and New Zealand as brought out by the findings of this research. This study is a primary contribution in this area since the findings are based on the survey and interview data from the two countries. No other theoretical study addresses this issue.

### **7.3 Managerial implications**

Third party purchase as a value-added service could be a new business mode for both 3PL providers and users since most 3PL providers may not currently offer such service. The key managerial implications of this research include the fact that managers for 3PL providers may need to consider offering this new service. 3PL providers should be confident of high returns for introducing new services to 3PL users because this new service could have mutual benefits for both parties and help them maintain competitive advantages. However, the research results from 3PL users may warn logistics managers that 3PL users may not have as much confidence as logistics providers have, although they believe that the potential market demand for 3PP service would be stable over time. Most 3PL users have concerns of the ability of 3PL providers to consolidate purchase orders, negotiate cheap purchasing price with suppliers, integrate the purchasing system into the current logistics system, and have high quality of qualified purchasing expertise. 3PL providers need to solve the issues raised by the users in order to successfully offer 3PP service. Both parties insist that 3PP service will be significantly and positively associated with the development of mutual reciprocity between 3PL providers and users.

## **7.4 Research limitations and future research**

Although this study makes significant contributions to both academia and practice, there are some limitations of our study. First, this research mainly focuses on the transaction cost theory. Future studies should address this concern, and should study the relationships between 3PL providers and their clients in the light of other organizational theories, such as the resources-based view and social capital theory.

Second, this research measures the four factors (asset specificity, uncertainty, order frequency, and transaction size) related to 3PP service. Based on the data from China and New Zealand, the asset specificity would not play a significant role, the validity of this factor would be needed for the future research. In addition, future study may explore additional factors which may influence 3PP service for 3PL providers and users, such as trust, performance of 3PL providers, global economics, the cycle period of customer purchasing, seasonal factors, and so forth.

Third, this research emphasizes 3PP service as a value-added service. In fact, 3PL providers have other options for the value-added services in order to increase profits and obtain sustainable business growth. Thus, future study may investigate and identify other value-added services performed by 3PL providers, such as reverse logistics network planning, customized logistics solutions, etc.

Fourth, this research utilizes the data from China and New Zealand. Possibly, people from other countries may have different views regarding 3PP service. Future research may extend to countries and regions with different social, economic, and cultural backgrounds, to help better understand the opinions of 3PL providers and users regarding 3PP service in other parts of the world.

## **7.5 Final remarks**

Certainly, although some logistics companies carry out a purchasing function, most of them only stay at the preliminary stage. The use of 3PP service is narrowly implemented in most instances. In other words, 3PP service is not widely recognized by many organizations, and cannot be necessarily expected to generate advantageous economies of scale. This research discusses the potential of 3PP service based on TCA, identifies strengths and limitations to offer 3PP service, describes the possible

ways to provide 3PP service, indicates the benefits to offering 3PP service, and illuminates overall 3PL providers' and users' perceptions of implementation of 3PP service. Continuously studying 3PP service is to help 3PL providers realize the importance of 3PP service and better help the executives to comprehensively and successfully conduct 3PP service in their businesses. In addition, 3PL users will be able to better understand how they can receive more cost savings opportunities and other associated benefits through using professional integrated 3PP service offered by their 3PL providers.

## Appendix A - Survey question (English version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### Questionnaire Form

#### Effectiveness of value added services by third party logistics providers

---

#### PARTICIPANT INFORMATION SHEET

Project title: Effectiveness of value-added services by third-party logistics providers

Researchers: Yangyan Shi, Associate Prof. Tiru Arthanari

My name is Yangyan Shi. I am a Doctoral student in the Department of Information Systems and Operations Management, Faculty of Business and Economics, University of Auckland, New Zealand.

I am studying third party purchase (3PP) as value-added services by third party logistics providers (3PL). This research focuses on 3PL providers and their users because it needs to identify whether 3PL providers are providing or willing to offer 3PP services. In addition, the research will also study the levels of using such services for 3PL users. If you are not a 3PL provider or user, please do not proceed with this survey.

As part of my research, I would like to invite you to participate. It takes approximately 15 minutes to complete this survey. This is anonymous. No information is recorded that could identify you. Because the survey is anonymous, no information can be withdrawn once it is completed and returned. All information will be kept in a secure location on the University premises.

The information collected will be published in my Doctoral thesis. The information may also be included in published journal articles and conference proceedings.

[Click here to start the survey](#)

By clicking on the link to the online survey, you have given your consent to participate in this survey. Thank you very much for your time and help in making this study possible. If you have any queries and wish to know more, please contact me at:

Contact details in New Zealand: Yangyan Shi, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland, 1142, New Zealand. E-mail: y.shi@auckland.ac.nz, Phone: (+64) 21 0392017

Contact details in China: Yangyan Shi, 20 Shi Fan Street, Wu Chen Road, Taiyuan, Shanxi, China, 030006. E-mail: y.shi@auckland.ac.nz, Tel:(+86) 351 7067602.

Thank you again for your time and help in making this study possible.

Yours faithfully,

Yangyan Shi

PhD student

You are also welcome to contact my supervisor, Associate Prof. Tiru Arthanari. The contact details as follows:

Supervisor's Contact Details: Associate Prof. Tiru Arthanari, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand. Tel. (+64) 9 373-7599 extn. 84857,

Head of Department's Contact Details: Prof. Michael Myers, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand. Tel. (+64) 9 373-7599 extn. 87468

This survey is approved by the human ethics committee of the University of Auckland. In case of any enquiries you may contact:

The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Level 3, 76 Symonds Street, Private Bag 92019, Auckland, New Zealand. Tel. (+64) 9 3737599 extn. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 13 Oct, 2010 For (3) years, Reference Number 2010/433

---

The international markets of third party logistics (3PL) are quite competitive. Most 3PL providers offer some basic services, such as transportation and warehousing services, but rarely perform value-added activities. The primary focus of this research is on third-party purchase as value-added services that can be beneficially offered by third-party logistics providers.

### **Part A: Background Information**

Q1: Where is your organisation located?

- New Zealand  China  Other

Q2: Which industry best describes your organisation?

- Logistics  Retail/Wholesale  Agriculture  Construction  Mechanical Manufacturing  Petrochemical  Electrical/Engineering  Electronics  Food/Beverage/Wine  Textile and Apparel  Public Admin/Health  Education  Other

Q3: Select one that best describes how many years your organization has partnered with 3PL providers or customers (*for 3PL providers*).

- Less than or equal to 2 years  
 More than 2 years, but less than or equal to 5 years  
 More than 5 years, but less than or equal to 10 years  
 More than 10 years, but less than or equal to 15 years  
 More than 15 years

Q4: Select one that best describes the size of your organization's employment (in full time equivalent positions).

- Less than 50  51-100  101-500  501-1000  1001-2000  Over 2000

Q5: Select one that best describes annual gross sales of your organisation.

- Less than or equal to NZ\$5 million  
 More than NZ\$5 million, but less than or equal to NZ\$10 million  
 More than NZ\$10 million, but less than or equal to NZ\$15 million  
 More than NZ\$15 million, but less than or equal to NZ\$20 million  
 More than NZ\$ 20 million

Q6: Select one that best describes the nature of your organisation's business.

- 3PL provider  3PL user

**If you are a user or potential user of 3PL services for the purchasing function (e.g. supplier, customer, etc) please proceed to Part B. If you are a 3PL provider, please proceed to Part C.**

**Part B: For 3PL Users**

*If you are a user or potential user of 3PL services for the purchasing function, please complete this section.*

Q7: Please rate your perceived level of importance for the following based on the services offered by 3PL providers.

S/N	The services offered by 3PL providers	Not using	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Transportation						
B	Warehousing						
C	Purchasing						
D	Freight consolidation and distribution						
E	Inventory management						
F	Product returns						
G	Order management						
H	Cross docking						
I	Packaging						

Q8: When deciding to outsource purchasing functions, to what extent has each of the following influenced your decision?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Purchasing Cost reduction					
B	Improved customer service					
C	Focus on core activities					
D	Lack of purchasing technology					
E	Lack of purchasing expertise					

Q9: The purchasing of each order requires close coordination with 3PL providers.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q10: Effective purchasing is key to your products' competitive positioning.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q11: Your organisation has spent a lot of time and effort in outsourcing the purchasing function.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q12: Your organisation's routines and working procedures are difficult processes to be transferred to 3PL providers.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q13: Demand forecasting for purchasing offered by your organisation is:

- 1 (Very Difficult)  (Difficult)  (Neutral)  (Easy)  5 (Very Easy)

Q14: Your organization is confident that outsourcing purchasing services to 3PL providers would achieve your goals.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q15: You are certain that outsourcing purchasing services would meet your service requirements.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q16: Your organisation is confident that demand for the outsourced purchasing services would be relatively constant for a long period.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q17: Best description of order frequency for major proportion of outsourced purchasing products:

- 1 (Very Low)  2 (Low)  3 (Medium)  4 (High)  5 (Very High)

Q18: As transaction frequency increases, the costs to monitor purchasing activities will increase.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q19: As transaction frequency increases, your 3PL provider will increase the negotiation power to reduce purchasing costs.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q20: You may not benefit much if your 3PL provider is not capable of purchasing large orders.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree) 5 (Strongly Agree)

Q21: Your 3PL provider has high volume and purchasing power sufficient to negotiate the price downwards.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree) 5 (Strongly Agree)

Q22: You believe that using consolidation in real procurement practice could reduce purchasing costs.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree) 5 (Strongly Agree)

Q23: Please indicate the importance you ascribe to the information that you get from a Request for Proposal (RfP).

S/N	Criteria	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Price					
B	Capacity					
C	Financial strength of your 3PL provider					
D	The quality of the management of your 3PL provider					
E	Information system capabilities of your 3PL provider					

Appendix

---

Q24: What is the influence on your outsourcing purchasing decision of the following?

S/N	Reason	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Your 3PL provider is trustworthy					
B	Your 3PL provider has a strong reputation					
C	Your 3PL provider improves your competitive market position					
D	Your 3PL provider offers economic benefits to you					
E	Your 3PL provider helps you achieve workforce cost reductions					

Q25: Which of the following purchasing activities can be outsourced to 3PL providers?

S/N	Purchasing activity	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
A	Category management					
B	Supplier market research					
C	Supplier qualification and selection					
D	Request for proposal management					
E	Bid preparation and management					
F	Cost analysis					
G	Supplier relationship management					

Q26: To what extent do you consider the following factors contribute to successful outsourcing of purchasing activities?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Costs for outsourced functions have been reduced					
B	Increased flexibility					
C	Service levels for the outsourced functions have been improved					
D	Our employee base has been reduced					
E	Our firm is better able to focus on core competencies					

Q27: Maintaining a long-term relationship with 3PL providers is important to you.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q28: You would like to share purchasing risks with 3PL providers.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
 5 (Strongly Agree)

Q29: To what extent have purchasing activities been successfully outsourced to 3PL providers?

- 1 (Very Unsuccessful)  (Unsuccessful)  (Neutral)  (Successfully)  
 5 (Very Successfully)

Q30: You are comfortable in working with 3PL providers.

- 1 (Very Uncomfortable)  (Uncomfortable)  (Neutral)  (Comfortable)  
 5 (Very Comfortable)

**THANK YOU FOR TAKING TIME TO COMPLETE THIS SURVEY**

**Part C: For 3PL Providers**

*If you are a current or potential 3PL provider for offering the purchasing functions, please complete this section.*

Q31: Please rate the level of importance for the following based on the services you provide.

S/N	The services offered by 3PL providers	Not using	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Transportation						
B	Warehousing						
C	Purchasing						
D	Freight consolidation and distribution						
E	Inventory management						
F	Product returns						
G	Order management						
H	Cross docking						
I	Packaging						

Q32: To what extent has each of the following influenced your decision to provide purchasing functions?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Purchasing cost reduction for your customer					
B	Improving your customer service					
C	Helping your customer focus on core activities					

Q33: To what extent has each of the following influenced your decision **not** to provide purchasing functions?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Lack of capital					
B	Lack of purchasing technology					
C	Lack of purchasing expertise					

Q34: The purchasing of each order requires close coordination with your organisation's customers.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
5 (Strongly Agree)

Q35: You have made significant investments in purchasing function resources dedicated to your customers.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
5 (Strongly Agree)

Q36: Your organisation could leverage the purchasing function to build relationships with the customers.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
5 (Strongly Agree)

Q37: On average, your customer's routines and working procedures are difficult processes to be transferred to your organisation.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
5 (Strongly Agree)

Q38: Demand forecasting for purchasing outsourced to your organisation is:

- 1 (Very Difficult) 2 (Difficult) 3 (Neutral) 4 (Easy) 5 (Very Easy)

Q39: Your organisation is confident that outsourcing purchasing services would return value to your organisation.

- 1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)  
5 (Strongly Agree)

Q40: Evaluating the current purchasing performance offered by your organisation is:

1 (Very Difficult) 2 (Difficult) 3 (Neutral) 4 (Easy) 5 (Very Easy)

Q41: You expect to offer purchasing services for a relatively long period.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q42: Increased frequency of purchasing orders could reduce the fixed cost per transaction.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q43: As transaction frequency increases, the costs for your customers to monitor purchasing activities will increase.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q44: As transaction frequency increases, your organisation will increase the negotiation power to reduce purchasing costs for your customers.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q45: Combining purchasing orders together may reduce the purchasing costs.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q46: You could have more power in the negotiation with suppliers when using consolidation in real procurement practice.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q47: You receive more benefits if your purchase orders are large.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Appendix

---

Q48: Please indicate the importance of the following criteria on how you believe your 3PL users judge you in the Request for Proposal (RfP) process.

S/N	Criteria	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Price					
B	Capacity					
C	Financial strength					
D	The quality of the management					
E	Information system capabilities					

Q49: Please indicate the importance of reasons that your 3PL users find for using your purchasing services.

S/N	Reason	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	Your organisation is trustworthy					
B	Your organisation has a strong reputation					
C	Your organisation improves competitive market position					
D	Your organisation receives economic benefits					
E	Your organisation helps customers achieve workforce cost reductions					

Q50: Which of the following purchasing activities can be offered by your organisation?

S/N	Purchasing activity	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
A	Category management					
B	Supplier market research					
C	Supplier qualification and selection					
D	Request for proposal management					
E	Bid preparation and management					
F	Cost analysis					
G	Supplier relationship management					

Q51: You would intend to help your customers minimise purchasing risks if you are providing or willing to offer this service.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q52: You would intend to maintain a long-term relationship with your customers.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q53: You would intend to help your customers focus on their own core business.

1 (Strongly Disagree)  (Disagree)  (Neutral)  (Agree)

5 (Strongly Agree)

Q54: To what extent do you consider the following factors contribute to successful outsourcing of purchasing functions?

S/N	Factor	Least Important	Less Important	Neutral	Somewhat Important	Very Important
A	3PL Customer satisfaction					
B	3PL Cost savings					
C	Your employee morale					
D	High reliability and consistency of service					

Q55: You are comfortable in working with your customers.

1 (Very Uncomfortable) 2 (Uncomfortable) 3 (Neutral) 4 (Comfortable)

5 (Very Comfortable)

**THANK YOU FOR TAKING TIME TO COMPLETE THIS SURVEY**

## Appendix B - Survey question (Chinese version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### 问卷调查表

#### 第三方物流提供商提供有效的增值服务

---

#### 参与者信息表

研究课题：第三方物流提供商提供有效的增值服务

研究人员：史杨焱，副教授： Tiru Arthanari

我是史杨焱，现是一名在新西兰奥克兰大学商业与经济学学院，信息系统和运营管理系的博士生。

我目前研究内容是第三方物流提供商的增值服务。本研究主要针对于第三方物流提供商和他们的用户,因为它需要确定第三方物流提供商是否提供或愿意提供第三方采购服务。此外,这个研究也在调查外包采购给第三方物流使用者的服务水平。

作为我研究的一部分，我想邀请您来参与。大约需要占用您 15 分钟时间去完成调查。这一调查是匿名的，不会有信息能够识别您的身份。因为这个调查是匿名的，所以当完成时，所输入的信息将不能够提取。在大学要求的前提下，所有的信息都将保存在一个安全地方。

收集来的信息将会被刊登在我的博士论文中。也有可能这些信息会发表在期刊论文和会议记录中。

[点击这里开始调查](#)

点击上面的链接进行在线调查，且表明您愿意参与这项调查。非常感谢您利用宝贵时间来支持我的研究。

## Appendix

---

如果您希望知道更多信息或有任何疑问，请联系我：

新西兰的联系方式：

联系人： Yangyan Shi

联系地址： Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland, 1142, New Zealand.

电子邮箱: y.shi@auckland.ac.nz,

联系电话: (+64) 21-0392017

中国的联系方式：

联系人： 史杨焱

中国，山西太原市坞城路师范街 20 号

邮编： 030006

电子邮箱： y.shi@auckland.ac.nz

电话： (+86) 351-7067602

非常感谢您花费宝贵时间来帮助我的研究！

此致

敬礼

史杨焱

并且也同样欢迎您联系我的导师：

副教授： Tiru Arthanari

联系地址： Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand.

电话： (+64) 9 373-7599 转 84857

系主任联系方式：

教授： Michael Myers

联系地址： Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand.

电话： (+64) 9 373-7599 转 87468

该调查已被奥克兰大学人文道德委员会批准。如果您对此有任何疑问请联系：

奥克兰大学人文道德委员会主席

联系地址： The University of Auckland Human Participants Ethics Committee, The University of Auckland, Level 3, 76 Symonds Street, Private Bag 92019, Auckland, New Zealand.

电话(+64) 9 3737599 转 8371

奥克兰大学人文道德委员会批准时间为 2010 年 10 月 13 日且有效期三年，参照号码：2010/433

---

第三方物流的国际市场竞争相当激烈。大多数第三方物流提供商只提供基本服务，如运输和仓储服务，但是很少提供增值服务。本课题主要研究由第三方物流提供商提供第三方采购这一增值服务的可行性以及相关问题。

问题 1: 请问贵公司所在地是。

- 新西兰 中国 其他

问题 2: 请问贵公司所属行业。

- 零售与批发 农业 建筑 机械制造 石油、石化 电子  
电气工程 食品、饮料、酿酒 纺织服装 公共管理与卫生 教育  
其它

问题 3: 贵公司与第三方物流提供商的合作时间。

- 小于或等于 2 年 2 年以上, 但小于或等于 5 年  
超过 5 年, 但小于或等于 10 年  
超过 10 年, 但小于或等于 15 年 超过 15 年

问题 4: 请问贵公司的正式员工数量。

- 小于 50 51-100 101-500 501-1000 1001-2000  
超过 2000

问题 5: 请问贵公司去年的营业收入。

- 小于或等于 2500 万人民币  
超过 2500 万人民币, 但小于或等于 5000 万人民币  
超过 5000 万人民币, 但小于或等于 7500 万人民币  
超过 7500 万人民币, 但小于或等于 1 亿人民币  
超过 1 亿人民币

问题 6: 请选择一个最佳描述贵公司的业务性质。

- 第三方物流的用户 第三方物流的提供商

**如果贵公司是现有第三方采购服务的用户或潜在用户，请回答第二部分。如果您是第三方物流提供商，请回答第三部分。**

**第二部分：用户**

如果贵公司是现有第三方采购服务的用户或潜在用户，请完成本部分问卷。

问题 7：请评估第三方物流提供商所提供的下列服务。

序号	第三方物流提供商提供的服务	不使用	最不重要	不重要	一般	重要	非常重要
A	运输						
B	仓储						
C	采购						
D	集中托运与配送						
E	库存管理						
F	产品回收						
G	订单管理						
H	越库配送 (Cross Docking)						
I	包装						

问题 8：当决定外包采购服务时，下列因素对贵公司决策的影响程度如何？

序列号	因素	最不重要	不重要	一般	重要	非常重要
A	降低采购成本					
B	改善客户服务					
C	专注于核心业务					
D	缺乏采购技术					
E	缺乏专业采购人员					

问题 9：每张采购订单均需要密切联系第三方物流提供商。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 10：成功有效的采购是影响贵公司产品竞争定位的关键因素。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 11：贵公司已经花费大量的时间和精力用于采购职能的外包。

1 (非常不同意) 2 (不同意) 3 (一般) 4 (同意) 5 (非常同意)

问题 12：将贵公司的日常惯例和运行流程完全移植到第三方物流提供商是非常困难的。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 13: 请指出贵公司采购需求预测的困难程度。

1 (非常困难) 2 (困难) 3 (一般) 4 (简单) 5 (非常简单)

问题 14: 外包采购服务给第三方物流提供商能够实现贵公司的总体战略目标, 贵公司对此很有信心。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 15: 您相信外包采购服务满足贵公司的要求。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 16: 贵公司外包采购需求将在很长时间内保持相对稳定。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 17: 请指出贵公司大多数外包采购产品订购频率。

1 (非常低) 2 (低) 3 (一般) 4 (高) 5 (非常高)

问题 18: 交易频率的增加将会导致采购活动监管成本的增加。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 19: 交易频率的增加将会使贵公司的第三方物流提供商拥有更大的谈判力量, 从而降低贵公司的采购成本。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 20: 如果第三方物流提供商只能提供小额采购订单, 则贵公司不可能获得更多的利益。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 21: 贵公司第三方物流提供商拥有大额的采购订单量和购买力, 从而可通过谈判使得采购价格降低。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 22: 您相信通过订单整合能够实现采购成本的降低。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 23: 请指出报价标书中下列标准的重要性。

序列号	标准	最不重要	不重要	一般	重要	非常重要
A	第三方物流提供商的价格					
B	第三方物流提供商的物流能力					
C	第三方物流提供商的资金实力					
D	第三方物流提供商的质量管理水平					
E	第三方物流提供商的信息系统能力					

问题 24：请指出以下选项在多大程度上反映了贵公司采购职能外包的原因？

序列号	原因	最不重要	不重要	一般	重要	非常重要
A	您的第三方物流提供商是值得信赖的					
B	您的第三方物流提供商有很高的声誉					
C	您的第三方物流提供商能改善公司的市场竞争地位					
D	您的第三方物流提供商可提升公司的经济收益					
E	您的第三方物流提供商有助于降低公司的劳动力成本					

问题 25：请指出下列哪些采购活动可以外包给第三方物流提供商。

序列号	采购过程	最不可能	不可能	一般	可能	非常可能
A	原材料类别管理					
B	供应商市场调研					
C	供应商资信度和选择					
D	报价招标管理					
E	标书编制和管理					
F	成本分析					
G	供应商关系管理					

问题 26：对于成功的采购外包业务，您认为以下评价指标的重要性。

序列号	因素	最不重要	不重要	一般	重要	非常重要
A	外包成本降低					
B	弹性增加					
C	外包服务水平得到改善					
D	员工人数降低					
E	公司能够更好地专注于核心竞争力					

问题 27: 保持与第三方物流提供商的长期合作关系对贵公司很重要。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 28: 贵公司愿意与第三方物流提供商共担采购风险。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 29: 请指出贵公司外包采购活动给第三方提供商的成功程度。

1 (非常不成功) 2 (不成功) 3 (一般) 4 (成功) 5 (非常成功)

问题 30: 贵公司与第三方物流提供商一起合作得很愉快。

1 (非常不愉快) 2 (不愉快) 3 (一般) 4 (愉快) 5 (非常愉快)

**问卷结束, 感谢您的合作!**

### 第三部分：第三方物流提供商

如果您是一个现有或潜在的第三方物流且提供采购职能服务的提供商，请完成这部分。

问题 31：请指出以下服务对贵公司的重要性。

序列号	第三方物流提供商提供的服务	不使用	最不重要	不重要	一般	重要	非常重要
A	运输						
B	仓储						
C	采购						
D	集中托运与配送						
E	库存管理						
F	产品回收						
G	订单管理						
H	交叉配送（Cross docking）						
I	包装						

问题 32：当考虑提供采购职能时，请指出下列因素对贵公司是否提供代理采购服务决策的影响程度？

序列号	因素	最不重要	不重要	一般	重要	非常重要
A	降低客户的采购成本					
B	提升对客户的总体服务水平					
C	帮助客户专注于核心业务					

问题 33：贵公司如果决定不提供代理采购服务，请指出下列因素的影响程度。

序列号	因素	最不重要	不重要	一般	重要	非常重要
A	缺乏资金					
B	缺乏采购技术					
C	缺乏专业采购人员					

问题 34: 每张代理采购订单均需要密切联系贵公司的客户。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 35: 贵公司已经对客户在采购资源中进行了大量的投资。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 36: 贵公司通过发挥代理采购职能有助于搭建完善的客户关系。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 37: 一般来说, 客户的日常惯例和运作程序很难移植到贵公司中。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 38: 请指出贵公司对客户的外包代理采购需求预测困难程度。

1 (非常困难) 2 (困难) 3 (一般) 4 (简单) 5 (非常简单)

问题 39: 贵公司相信提供代理采购职能服务可获得较高收益。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 40: 请指出对贵公司所提供的代理采购绩效进行评估的困难程度。

1 (非常困难) 2 (困难) 3 (一般) 4 (简单) 5 (非常简单)

问题 41: 贵公司期望在相当长的时期里提供代理采购服务。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 42: 代理采购订单频率的增加,可减少每笔交易的固定成本。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 43: 交易频率增加将会导致客户对贵公司代理采购活动监控成本的增加。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 44: 交易频率增加将使贵公司增加谈判能力来帮助客户降低采购成本。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 45: 把采购订单集中到一起可以降低采购成本。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 46: 当贵公司在实际采购中利用整合订单时, 会对供应商拥有更大的谈判权。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 47: 如果贵公司的代理采购订单款额很大, 那么贵公司会得到更多的收益。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意) 5 (非常同意)

问题 48: 请指出在报价标书中下列标准的重要性。

序列号	标准	最不重要	不重要	一般	重要	非常重要
A	价格					
B	物流能力					
C	公司的资金实力					
D	质量管理					
E	信息系统能力					

问题 49: 如果贵公司提供或将要提供代理采购服务, 对自身进行评估时以下因素的重要程度。

序列号	原因	最不重要	不重要	一般	重要	非常重要
A	您公司是值得信赖的					
B	您公司有很高的声誉					
C	您公司能改善市场竞争地位					
D	您公司可获得经济效益					
E	您公司可帮助顾客实现降低劳动力成本					

问题 50: 请指出贵公司可以提供下列哪些代理采购活动。

序列号	采购过程	最不可能	不可能	一般	可能	非常可能
A	原材料类别管理					
B	供应商的市场调研					
C	供应商资信度评价和选择					
D	报价招标管理					
E	标书编制和管理					
F	成本分析					
G	供应商关系管理					

问题 51: 如果贵公司现已提供或将要提供代理采购服务, 贵公司愿意帮助客户降低采购风险。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意)

5 (非常同意)

问题 52: 保持一个长期客户关系对贵公司很重要。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意)

5 (非常同意)

问题 53: 贵公司愿意帮助客户专注于其核心业务。

1 (强烈反对) 2 (反对) 3 (一般) 4 (同意)

5 (非常同意)

问题 54: 贵公司会认为下列因素在多大程度上有助于代理采购服务的成功。

序列号	因素	最不重要	不重要	一般	重要	非常重要
A	您公司客户满意度					
B	您公司成本的节约					
C	您公司员工士气					
D	提高服务的可靠性和稳定性					

问题 55: 贵公司与客户一起合作得比较愉快。

1 (非常不愉快) 2 (不愉快) 3 (一般) 4 (愉快) 5 (非常愉快)

**问卷结束, 感谢您的合作!**

## **Appendix C - Interview question (English version)**

### **3PL providers**

#### **Background information**

Organization information: core business, products/services, key customers/suppliers, organization structure, etc.

#### **Strengths and weaknesses**

Suppose you are going to provide 3PP service, what do you think of your company's strengths and limitations for offering 3PP service?

#### **Asset specificity**

- Suppose your organization is going to provide third party purchase (3PP) service, do you believe you will recruit more purchasing professionals in your organization?
- How about other investments, such as, technology, warehousing, equipment, etc.?
- If your organization is willing to offer 3PP service, is it necessary to invest more efforts to build close relationships with your clients?

#### **Uncertainty**

- Suppose your organization is going to provide this service, do you have confidence that demand for outsourcing purchasing service would be relatively constant for a long time period?
- How do you think that competitors who are willing to provide 3PP service might influence on the return of value to your organization?
- How do you think that the change of customers' orders affect to offer purchasing services of your organization for a relatively long period?

### **Frequency**

- Suppose your organization is going to provide 3PP service, how often do you expect to receive purchase orders from your customers? Daily, weekly, monthly, quarterly, and annually?
- Do you think that increased frequency of purchasing orders could reduce the fixed cost per transaction for 3PL providers?
- Do you believe that an increase of frequency may result in you having more negotiation power to get a reasonable price for your customers?

### **Size**

- Do you think that larger transaction size may allow you to have more power to reduce the purchasing costs?
- Do you believe that an increase of aggregated orders could make your organization more powerful in the negotiation with suppliers?

### **Purchasing**

- Suppose your organization is willing to offer purchasing service, how does your organization provide third party purchase as a value-added service?

### **Value-to-client**

- What are the values for 3PL users if your organization is willing to offer 3PP service?

### **Benefit-to-provider**

- What are the benefits for 3PL providers if your organization is willing to offer 3PP service?

### **Additional questions**

- Do you believe that Small- and Medium-size Enterprises would likely use 3PP service if a 3PL provider is willing to offer such service?

- Will your organization use the format of group purchasing organization to offer 3PP service? Do you believe that this new concept could be implemented successfully?

### **3PL users**

#### **Background information**

Organization information: core business, products/services, key customers/suppliers, organization structure, etc.

#### **Strengths and weaknesses**

Supposing you going to use 3PP service, what do you think of your logistics company's strengths and limitations for implementing 3PP service?

#### **Asset specificity**

- Suppose your organization is going to use third party purchase (3PP) service, do you believe that your 3PL provider will recruit more purchasing professionals in its organization?
- How about other investments offered by your 3PL provider, such as, technology, warehousing, equipment, etc.?
- If your organization might be willing to use 3PP service, do you expect that your 3PL provider needs to invest more efforts to build close relationships with your organization?

#### **Uncertainty**

- Suppose your organization is going to use this service, do you have confidence that demand for outsourcing purchasing service would be relatively constant for a long time period?
- Do you have confidence that outsourcing purchasing services to your 3PL provider would help you achieve your goals?
- If you are willing to use this service, do you believe that purchase orders will be changed significantly?

### **Frequency**

- Suppose your organization is going to use 3PP service, how often do you expect to place purchase orders to your 3PL provider? Daily, weekly, monthly, quarterly, annually?
- Do you think that increased frequency of purchasing orders could raise the costs to monitor purchasing activities?
- Do you believe that an increase of frequency may result in your 3PL provider having more negotiation power to reduce purchasing costs?

### **Size**

- Do you think that larger transaction size may allow your 3PL provider to have more power to reduce the purchasing costs?
- Do you believe that an increase of aggregated orders could make your 3PL provider have more power in the negotiation with suppliers?

### **Purchasing**

- Suppose your organization is willing to use purchasing services, how do you think that purchasing as a value-added service can be offered by your 3PL provider?

### **Value-to-client**

- What are the values for your organization if 3PL providers are willing to offer 3PP service?

### **Benefit-to-provider**

- What benefits are there for 3PL providers if your organization is willing to use 3PP service?

### **Additional questions**

- Do you believe that your organization would likely use 3PP service?
- How well do you think that 3PL providers use the format of group purchasing organization to offer 3PP service? Do you believe that this new concept could be implemented successfully?

## Appendix D - Interview question (Chinese version)

### 第三方物流公司

#### 背景描述

- 组织信息：核心业务，产品服务，客户与供应商，组织结构等

#### 优势劣势

- 假如贵公司愿意提供第三方采购服务，您认为贵公司优势在哪里？劣势呢？

#### 资产专属性

- 假如贵公司愿意提供第三方采购服务，您认为贵公司是否需要招聘一些专业的采购人员呢？
- 对于其他一些投资用于第三方采购，例如，技术，仓储，设备等，您是怎么认为呢？
- 假如贵公司愿意提供第三方采购服务，您认为是否需要跟客户建立更加紧密的关系呢？

#### 不确定性

- 假如贵公司愿意提供代理采购服务，您认为外包采购需求可能会长期稳定吗？
- 您是如何认为愿意提供第三方采购服务的其他潜在竞争者可能会影响贵公司的价值回报吗？
- 您是如何认为客户订单的变化可能会长期影响贵公司的第三方采购服务？

#### 交易频率

- 假如贵公司愿意提供第三方采购服务，您期望多久能够获得采购订单？每天，每周，每月，每个季度，还是每年？
- 您是如何认为订单频率增加可能会导致降低第三方物流提供商单笔交易的固定成本？
- 您相信如果增加采购频率将会导致贵公司会拥有较大的谈判力量来获得更优惠的采购价格吗？

#### 交易规模

- 您是如何认为较大的交易规模可能会使得贵公司有更多谈判力量来降低采购成本呢？

- 您相信增加聚合订单会使得物流公司拥有更大的谈判力量吗？

#### 采购服务

- 假如贵公司将要提供第三方采购服务，您将如何把第三方采购作为一种增值服务被贵公司所提供呢？

#### 客户价值

- 假如贵公司愿意提供第三方采购服务，您认为贵公司的客户会得到什么价值呢？

#### 物流公司利益

- 假如贵公司愿意提供第三方采购服务，您认为贵公司会得到什么利益呢？

#### 额外问题

- 如果第三方物流公司提供第三方采购服务，您认为中小型企业可能会用此服务吗？
- 贵公司将来会用团体采购模式来提供第三方采购服务吗？您认为这个新概念会成功实现吗？

### 第三方物流用户

#### 背景描述

- 组织信息：核心业务，产品服务，客户与供应商，组织结构等

#### 优势劣势

- 假如贵公司愿意使用第三方采购服务，您认为物流公司优势在哪里？劣势呢？

#### 资产专属性

- 假如贵公司愿意使用第三方采购服务，您认为物流公司是否需要招募一些专业的采购人员呢？
- 对于物流公司其他投资用于第三方采购，例如，技术，仓储，设备等，您是怎么认为呢？
- 假如贵公司愿意使用第三方采购服务，您期望第三方物流公司与贵公司是否需要建立更加紧密的关系呢？

### 不确定性

- 假如贵公司愿意使用第三方采购服务，您认为外包采购需求可能会长期稳定吗？
- 外包采购服务给第三方物流公司可以实现贵公司的目标，对此您有信心吗？
- 如果贵公司愿意使用第三方采购服务，您认为贵公司采购订单会有明显的变化吗？

### 交易频率

- 假如贵公司愿意使用第三方采购服务，您期望多久能够下采购订单给第三方物流公司呢？每天，每周，每月，每个季度，还是每年？
- 增加采购订单频率可能提高监控采购活动成本，您对此如何看待？
- 您认为增加采购频率会使得第三方物流公司将会拥有更大的谈判力量来获得更低的采购价格吗？

### 交易规模

- 较大的交易规模将能帮助第三方物流公司获得更大的谈判力量来降低采购成本？您对此如何看待？
- 您相信增加聚合订单会使得第三方物流公司与供应商谈判时拥有较大的谈判力量吗？

### 采购服务

- 假如贵公司愿意使用第三方采购服务，您将如何认为第三方采购作为一项增值服务被第三方物流公司提供呢？

### 客户价值

- 假如第三方物流公司愿意提供第三方采购服务，您认为贵公司会得到什么价值呢？

### 物流公司利益

- 假如贵公司愿意使用第三方采购服务，您认为第三方物流公司会得到什么利益呢？

### 额外问题

- 您认为贵公司可能会用第三方采购服务吗？
- 您如何认为第三方物流公司利用团体采购模式来提供第三方采购服务呢？您相信这个新概念会成功实现吗？

## Appendix E - Participant information sheet (English version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### **PARTICIPANT INFORMATION SHEET – MANAGER (Ref. 2010/433)**

Project title: Effectiveness of value-added services by third-party logistics providers

Researchers: Yangyan Shi, Associate Prof. Tiru Arthanari

My name is Yangyan Shi. I am a Doctoral student in the Department of Information Systems and Operations Management, Faculty of Business and Economics, University of Auckland, New Zealand.

I am studying third-party purchase (3PP) as value-added services by third-party logistics providers (3PL). This research focuses on 3PL providers and their users because it needs to identify whether 3PL providers are providing or willing to offer 3PP services. In addition, the research will also study the levels of using such services for 3PL users. As part of my research, I would like to invite you to participate in an interview, as you have experience in this or related areas.

Your participation is voluntary. The interview will take about 30 minutes. You may decline to answer any particular question(s) without giving a reason. I would like to audio-tape the interview for ensuring correct collection of information. It can be turned off at any time. The transcripts will be transcribed by us. You are able to review transcripts if you wish. You can withdraw the information offered within four weeks after the interview. All information collected, including consent forms, audio tape and any transcript, will be separated and securely stored on university premises, and destroyed after six years.

The information collected will be published in my Doctoral thesis. The information may also be included in published journal articles and conference proceedings. You will be informed of any publication that results from this research, and will be provided with a copy of the work if you request it. All individuals will be given pseudonyms in the research and any particular information that may potentially identify you will be removed.

If you have any queries and wish to know more, please contact me at:

Contact details in New Zealand: Yangyan Shi, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland, 1142, New Zealand. E-mail: y.shi@auckland.ac.nz, Phone: (+64) 21 0392017

Contact details in China: Yangyan Shi, 20 Shi Fan Street, Wu Chen Road, Taiyuan, Shanxi, China, 030006. E-mail: y.shi@auckland.ac.nz, Tel:(+86) 15110379939.

Thank you very much for your time and help in making this study possible.

Yours faithfully,

Yangyan Shi

PhD student

You are also welcome to contact my supervisor, Associate Prof. Tiru Arthanari. The contact details as follows:

Supervisor's Contact Details: Associate Prof. Tiru Arthanari, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand. Tel. (+64) 9 373-7599 extn. 84857,

Head of Department's Contact Details: Prof. Michael Myers, Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand. Tel. (+64) 9 373-7599 extn. 87468

This survey is approved by the human ethics committee of the University of Auckland. In case of any enquiries you may contact:

The Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Level 3, 76 Symonds Street, Private Bag 92019, Auckland, New Zealand. Tel. (+64) 9 3737599 extn. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 13 Oct, 2010 For (3) years, Reference Number 2010/433

## Appendix F - Participant information sheet (Chinese version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### 参与者信息表 - 经理

研究课题：第三方物流提供商提供有效的增值服务

研究人员：史杨焱，副教授： Tiru Arthanari

我是史杨焱，现是一名在新西兰奥克兰大学商业与经济学学院，信息系统和运营管理系的博士生。

我目前研究内容是第三方物流提供商的增值服务。本研究主要针对于第三方物流提供商和用户,这个研究需要确定第三方物流提供商是否提供或愿意提供第三方采购服务。此外,这个研究也在调查外包采购给第三方物流使用者的服务水平。作为我研究的一部分，因您具备相关领域的经验，所以我想邀请您来参与到这个研究中。

您的参与是自愿的，采访大约持续 30 分钟。您可以没有理由的拒绝回答任何特殊问题。我想对采访进行录音来确保收集信息的正确性。录音可以在任何时间关闭。您的录音由我们内部来进行翻译。如果您愿意，您可以对其审核。您可以在面试后四周内有权撤回您所提供的信息。收集的全部信息，包括同意表，录音磁带与所有的翻译文件将会分开存放在大学安全的地方，并且在 6 年后销毁。

收集来的信息将会被刊登在我的博士论文中，也可能这些信息会发表在期刊论文和会议记录中。研究发表的任何结果您都会得到通知，并且如果您需要也可以获得研究结果的复印件。所以在研究中的个人信息都会以假名出现，另外有关身份的特殊信息都会被移除。

如果您希望知道更多信息或有任何疑问，请联系我：

新西兰的联系方式：

联系人： Yangyan Shi

联系地址： Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland, 1142, New Zealand.

电子邮箱: y.shi@auckland.ac.nz,

## Appendix

---

联系电话: (+64) 21-0392017

中国的联系方式:

联系人: 史杨焱

中国, 山西太原市坞城路师范街 20 号

邮编: 030006

电子邮箱: y.shi@auckland.ac.nz

电话: (+86) 15110379939.

在此, 非常感谢您利用宝贵时间来支持我的研究!

此致

敬礼

史杨焱

并且也同样欢迎您联系我的导师:

副教授: Tiru Arthanari

联系地址: Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand.

电话: (+64) 9 373-7599 转 84857

系主任联系方式:

教授: Michael Myers

联系地址: Department of Information Systems and Operations Management, The University of Auckland, Private Bag 92019, Auckland Mail Centre, Auckland 1142, New Zealand.

电话: (+64) 9 373-7599 转 87468

该调查已被奥克兰大学人文道德委员会批准。如果您对此有任何疑问请联系:

奥克兰大学人文道德委员会主席

联系地址: The University of Auckland Human Participants Ethics Committee, The University of Auckland, Level 3, 76 Symonds Street, Private Bag 92019, Auckland, New Zealand.

电话(+64) 9 3737599 转 8371

奥克兰大学人文道德委员会批准时间为 2010 年 10 月 13 日且有效期三年, 参照号码: 2010/433

## Appendix G - Consent form (English version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### CONSENT FORM FOR THE MANAGER OF ORGANIZATION

(Ref. 2010/433)

#### THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Effectiveness of value-added services by third-party logistics providers

Name of Researcher: Yangyan Shi, Associate Prof. Tiru Arthanari

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that I am free to withdraw participation at any time, and to withdraw any data traceable to me up to four weeks.
- I agree/ do not agree to be audiotaped.
- I understand that even if I agree to be audiotaped, I can ask for the recording to be turned off at any time.
- I wish/ do not wish to review transcripts to me.
- I wish/ do not wish to receive the summary of findings.
- I understand that data will be kept for 6 years, after which they will be destroyed.

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 13 Oct, 2013 FOR (3) YEARS  
REFERENCE NUMBER 2010/433

## Appendix H - Consent form (Chinese version)



Department of Information systems  
and Operations Management  
Owen G Glenn Building  
12 Grafton Road  
Auckland, New Zealand  
Telephone 64 9 373 7599  
Facsimile 64 9 373 7430

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

### 同意书 – 公司经理

这个同意书的有效期为 **6** 年

项目名称: 第三方物流提供商提供有效的增值服务

研究者姓名: 史杨焱 副教授: Tiru Arthanari

我已经阅读了参与者信息表, 充分理解了本研究性质, 和为什么我被选中进行这个研究。我有机会能提出问题, 且能够得到我满意的答案。

- 我同意参加这项研究。
- 我明白我随时可以在任何时间退出参与, 在四个星期之内可以撤回任何信息。
- 我同意/不同意被录音。
- 我明白即使我同意录音, 我也可以在任何时候要求停止录音。
- 我希望/不希望去检查我的录音记录。
- 我希望/不希望收到研究结果。
- 我明白数据将会保留 **6** 年之后被销毁。

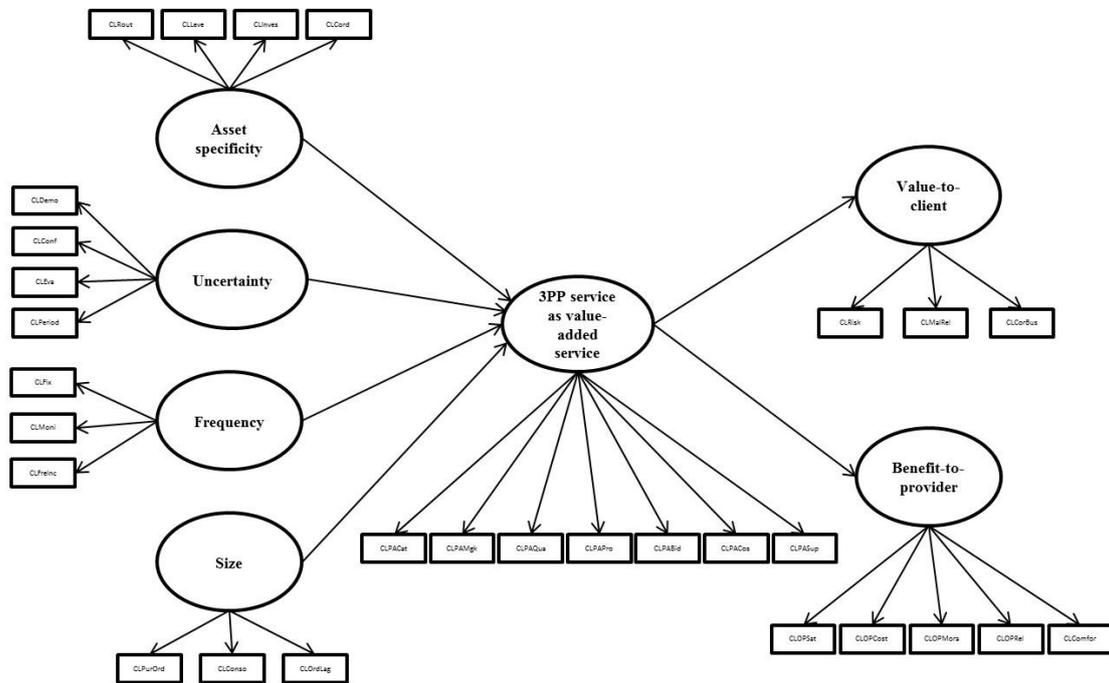
姓名 \_\_\_\_\_

签名 \_\_\_\_\_ 日期 \_\_\_\_\_

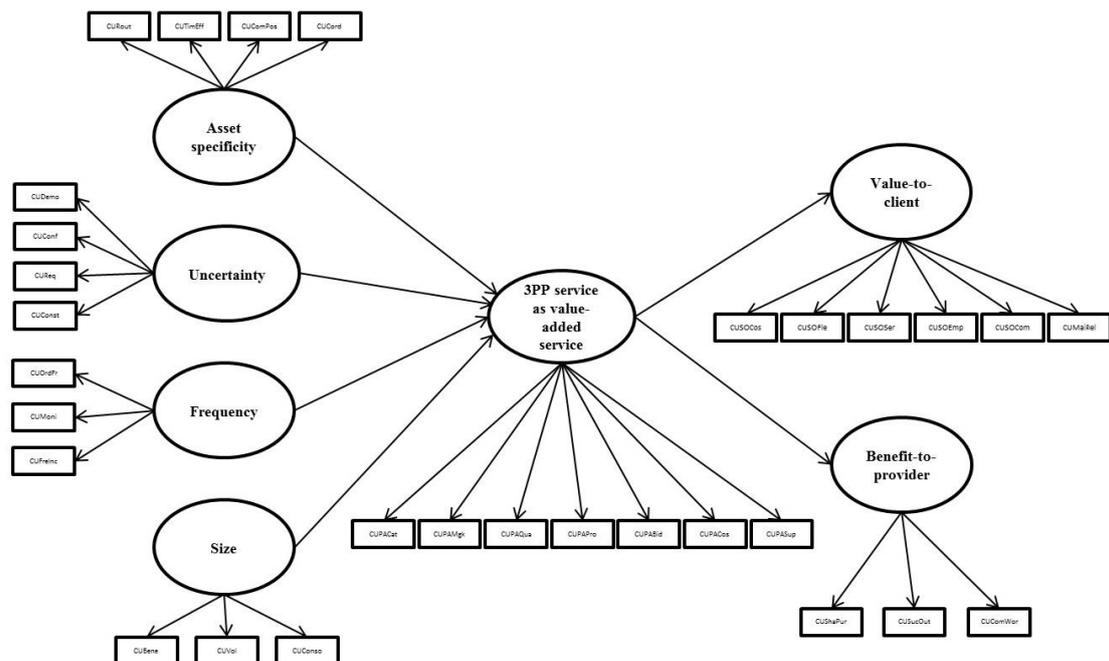
奥克兰大学人文道德委员会批准时间为 2010 年 10 月 13 日且有效期三年, 参照号码:  
2010/433

## Appendix I - SEM models

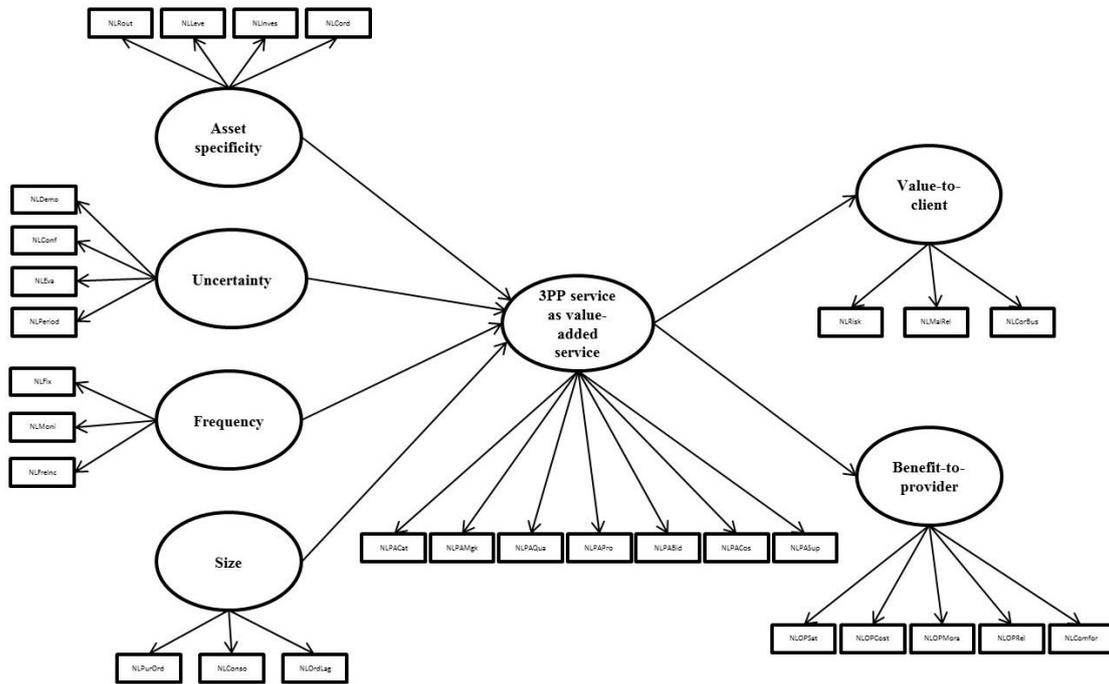
### China – 3PL providers



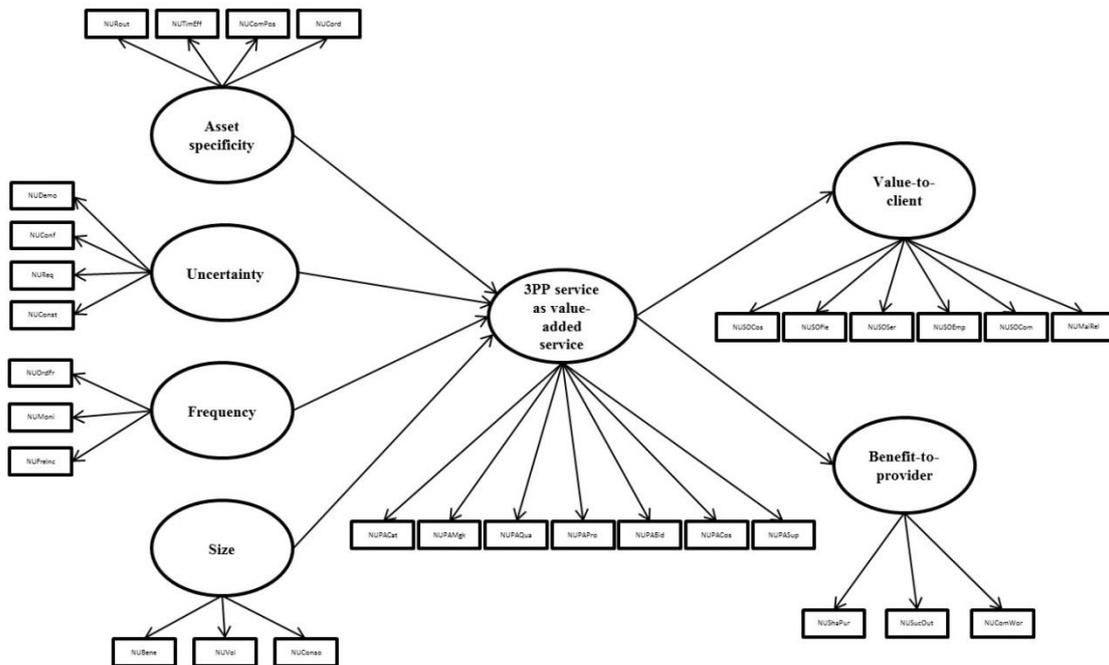
### China – 3PL users



### New Zealand – 3PL providers



### New Zealand – 3PL users



## Appendix J - Tests of normality

### China – 3PL providers

	Tests of Normality		
	Shapiro-Wilk		
	Statistic	df	Sig.
CLCord	.882	245	.181
CLInves	.866	245	.227
CLLeve	.864	245	.067
CLRout	.859	245	.255
CLDemo	.872	245	.078
CLConf	.860	245	.202
CLEva	.867	245	.090
CLPeriod	.811	245	.154
CLFix	.839	245	.299
CLMoni	.848	245	.074
CLFreInc	.824	245	.068
CLPurOrd	.740	245	.083
CLConso	.719	245	.076
CLOrdLag	.807	245	.069
CLPACat	.869	245	.130
CLPAMgk	.859	245	.086
CLPAQua	.842	245	.149
CLPAPro	.852	245	.141
CLPABid	.871	245	.170
CLPACos	.853	245	.162
CLPASup	.837	245	.069
CLRisk	.707	245	.080
CLMaiRel	.677	245	.226
CLCorBus	.681	245	.080
CLOPSat	.752	245	.065
CLOPCost	.750	245	.064
CLOPMora	.786	245	.129
CLOPRel	.781	245	.081
CLComfor	.772	245	.069

### China – 3PL users

	Tests of Normality		
	Shapiro-Wilk		
	Statistic	df	Sig.
CUCord	.892	242	.079
CUComPos	.833	242	.080
CUTimEff	.853	242	.071
CURout	.879	242	.066
CUDemo	.866	242	.108
CUConf	.874	242	.286
CUReq	.871	242	.200
CUConst	.841	242	.068
CUOrdFr	.891	242	.075
CUMoni	.861	242	.065
CUFreInc	.872	242	.120
CUBene	.849	242	.121
CUVol	.863	242	.072
CUConso	.848	242	.105
CUPACat	.885	242	.144
CUPAMgk	.899	242	.107
CUPAQua	.897	242	.081
CUPAPro	.888	242	.224
CUPABid	.899	242	.107
CUPACos	.881	242	.076
CUPASup	.894	242	.061
CUSOCos	.850	242	.140
CUSOFle	.879	242	.066
CUSOSer	.877	242	.072
CUSOEmp	.888	242	.112
CUSOCom	.862	242	.065
CUMaiRel	.882	242	.088
CUShaPur	.878	242	.062
CUSucOut	.823	242	.065
CUComWor	.847	242	.096



---

## References

- Africk, J. M., & Calkins, C. S. (1994). Does asset ownership mean better service. *Transportation and Distribution*, 35(5), 49-61.
- Amaral, J., Billington, C., & Tsay, A. (2006). Safeguarding the promise of production outsourcing. *Interfaces*, 36(3), 220-233.
- Anderson, E. (1985). The salesperson as outside agent or employee: a transaction cost analysis. *Marketing Science*, 4, 234-254.
- Anderson, E., & Schmittlein, D. (1984). Integration of the sales force: an empirical examination. *Rand Journal of Economics*, 15, 385-395.
- Anderson, M. G., & Katz, P. B. (1998). Strategic sourcing. *International Journal of Logistics Management*, 9(1), 1-13.
- Andersson, D., & Norrman, A. (2002). Procurement of logistics services – a minutes work or a multi-year project? *European Journal of Purchasing & Supply Management*, 8(1), 3-14.
- Ansari, A., & Modarress, J. R. (2010). Challenges of outsourcing logistics to third-party providers. *International Journal of Logistics Systems and Management*, 7(2), 198-218.
- Arnold, U. (1996). Purchasing consortia: theoretical framework and empirical data. *Revista de Economia e Direito*, 1(2), 5-26.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail survey. *Journal of Marketing Research*, 14(3), 396-402.
- Arroyo, P., Gaytan, J., & Boer, L. (2006). A survey of third-party logistics in Mexico and a comparison with reports on Europe and USA. *International Journal of Operations & Production Management*, 26(6), 639-667.
- Aubert, B., Houde, J. F., Patry, M., & Rivard, S. (2006). *A multi-level investigation of IT outsourcing*. Working paper, Ecole des Hautes Etudes Commerciales (HEC), Montreal, Canada.
- Azoulay, P. (2000). *The many faces of outsourcing: adjustment costs, transaction costs, and governance spillovers*. Working Paper, National Bureau of Economic Research, Cambridge, MA.
- Ballou, R. H. (1992). *Business Logistics Management* (4<sup>th</sup> ed.). New Jersey: Prentice-Hall, Inc.
- Barlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, 3(2), 77-85.
- Barrett, P. (2007). Structural equation modeling: adjudging model fit. *Personality and Individual Differences*, 42(5), 815-824.
- Bazeley, P. (2007). *Qualitative data analysis with NVivo*. London: SAGE Publications Ltd.
- Beamon, B. M. (1999). Measuring supply chain performance. *International Journal of Operations and Production Management*, 19(3), 275-292.
- Bengt, H., & Roberts, J. (1998). The boundaries of the firm revisited. *Journal of Economic Perspective*, 12(4), 73-94.
- Berglund, M., Laarhoven, P., Sharman, G., & Wandel, S. (1999). Third-party logistics: is there a future? *International Journal of Logistics Management*, 10(1), 59-70.
- Bhatnagar, R., Sohal, A. S., & Millen, R. (1999). Third party logistics services: a Singapore perspective. *International Journal of Physical Distribution & Logistics Management*, 29(9), 569-587.

- Bienstock, C. C., & Mentzer, J. R. (1999). An experimental investigation of the outsourcing decision for motor carrier transportation. *Transportation Journal*, 39(1), 42-59.
- Blaxter, L., Hugher, C., & Tight, M. (2001). *How to research*. Buckingham: Open University Press.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Bolumole, Y. A. (2001). The supply chain role of third-party logistics providers. *International Journal of Logistics Management*, 12(2), 87-102.
- Borden, R. G., & Hayward, S. (1979). *Getting the most from the buying office*. In: Cash, R. P., New York:
- Bottani, E., & Rizzi, A. (2006). A fuzzy TOPSIS methodology to support outsourcing of logistics services. *Supply Chain Management: an International Journal*, 11(4), 294-308.
- Bourlakis, C., & Bourlakis, M. (2005). Information technology safeguards, logistics asset specificity and fourth party logistics network creation in the food retail chain. *Journal of Business and Industrial Marketing*, 20(2), 88-98.
- Brecher, R., & Gelb, C. (1997). *China Business Review*, 24, 14-22.
- Briggs, E., Landry, T. D., & Daugherty, P. J. (2010). Investigating the influence of velocity performance on satisfaction with third-party logistics service. *Industrial Marketing Management*, 39(4), 640-649.
- Bryman, A. (2008). *Social research methods* (4th ed.). Oxford: Oxford University Press.
- Bryman, A., & Bell, E. (2003). *Business research methods*. New York: Oxford University Press Inc.
- Buffa, F. P., & Jackson, W. M. (1983). A goal programming model for purchase planning. *Journal of Purchasing and Materials Management*, 19(3), 27-34.
- Burns, L. R. (2002). *Role of group purchasing organizations*. San Francisco, John Wiley & Sons.
- Burns, R. B. (1994). *Introduction to research methods* (2<sup>nd</sup> ed.). Melbourne: Longman Cheshire.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: basic concepts, applications, and programming*. Mahwah, N.J: Lawrence Erlbaum Associates.
- Byrne, B. M. (1989). *A primer of LISREL: basic applications and programming for confirmatory factor analysis analytic models*. NY: Springer-Verlag.
- Carter, P. L., Carter, J. R., Monczka, R. M., Slaigh, T. H., & Swan, A. J. (2000). The future of purchasing and supply: a ten-year forecast. *Journal of Supply Chain Management*, 36(1), 14-26.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research*. New York: John Wiley & Sons, Inc.
- Cavana, R. Y., Harrison, I. G., Heffernan, F. E. B., & Kissling, C. C. (1997). *Freight transport industry in New Zealand*, working paper 2/97, Graduate School of Business & Government Management, Victoria University of Wellington, Wellington.
- Cavinato, J. (1991). How to make the outsourcing decision. *Distribution*, May, 84-86.
- Cavinato, J. L. (1984). *Purchasing and materials management: integrative strategies*. West, St. Paul: West Publishing.
- Chapman, T. L., Gupta, A., & Mango, P. D. (1998). *Group purchasing is not a panacea for US hospitals*. McKinsey Quarterly, 1, 160-165.

- Charles, C. M. (1995). *Introduction to educational research* (2nd ed.). San Diego: Longman.
- Chen, H., Tian, Y., Ellinger, A. E., & Daugherty, P. J. (2010). Managing logistics outsourcing relationships: an empirical investigation in China. *Journal of Business Logistics*, 31(2), 279-299.
- China Federation of Logistics and Purchasing. (2011). *China logistics yearbook*. Beijing: China Supplies Press.
- Chua, W. F. (1986). Radical developments in accounting thought. *The Accounting Review*, 61(4), 601-632.
- Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16 (1), 64-73.
- Clark, R., Zmud, R., & McCray, G. (1996). The outsourcing of information services: transforming the nature of business in the information industry. *Journal of Information Technology*, 10, 221-238.
- Clements, M. D. J., & Wilson, M. J. (2009). Aligning 3PL service bundles with relational integration: a conceptual model. *International Journal of Services Technology and Management*, 12(1), 88-105.
- Collis, J., & Hussey, R. (2009). *Business research: a practical guide for undergraduate and postgraduate students* (2<sup>nd</sup> ed.). Basingstoke, Hampshire: Palgrave Macmillan Publishing.
- Coase, R. H. (1988). *The firm, the market and the law*. Chicago: The University of Chicago Press.
- Coase, R. H. (1937). The nature of the firm. *Economica* 4, 386-405.
- Commons, J. R. (1965). Social reformer and institutional economist. *American Journal of Economics and Sociology*, 24(1), 85-96.
- Cook, T., & Campbell, D. (1979). *Quasi-experimentation: design & analysis issues*. Chicago: Rand McNally.
- Cooper, M. C., & Gardner, J. T. (1993). Building good business relationships: more than just partnering or strategic alliances. *International Journal of Physical Distribution and Logistics Management*, 23(6), 14-26.
- Cousins, P. D., Handfield, R. B., Lawson, B., & Petersen, K. J. (2006). Creating supply chain relational capital: the impact of formal and informal socialization processes. *Journal of Operations Management*, 24(6), 851-863.
- Cox, A., Chicksand, L., Ireland, P. and Day, M. (2001) *The e-business report*, Boston: Earlsgate Press.
- Curkovic, S., Vickery, K., & Droge, C. (2000). An empirical analysis of the competitive dimensions of quality performance in automotive supply industry. *International Journal of Operations & Production Management*, 20(3), 386-403.
- Czaja, R., & Blair, J. (1996). *Designing surveys: A guide to decisions and procedures*. California: Pine Forge Press.
- Dapiran, P., Lieb, R., Millen, R., & Sohal, A. (1996). Third party logistics services usage by large Australian firms. *International Journal of Physical Distribution and Logistics Management*, 26(10), 36-45.
- Deacon, D., Bryman, A., & Fenton, N. (1998). Collision or collusion? A discussion of the unplanned triangulation of quantitative and qualitative research methods, *International Journal of Social Research Methodology*, 1(1), 47-63.
- Dobler, D. W. (1965). The challenge of proficiency in small company purchasing. *Journal of Purchasing*, 1(1), 53-61.
- Dornier, P. (1998). *Global operations and logistics: text and cases*. USA: Wiley.

- Dollinger, M. J., & Kolchin, M. G. (1986). Purchasing and the small firm. *American Journal of Small Business*, 10(3), 33-45.
- Dooley, L., & Yeow, W. C. (1998). *Report on surveys of Australian and Singaporean CEO's perceptions and expectations of the purchasing function*. Proceedings of the 7<sup>th</sup> International Annual IPSERA Conference, London, 5-7 April.
- Ebig, M. (1999). *Cooperative sourcing as a new strategic supply concept: theoretical framework and empirical findings*. 9th International Annual IPSERA conference, Belfast, Dublin.
- Elizabeth, L. (2001). 3PL: where it's at, where it's going and why. *NZ Business*, 5(2), 43.
- Elizabeth, L. (1999). How to gain advantage from smart logistics. *NZ Marketing Magazine*, 18(8), 40.
- Ellegaard, C. (2006). Small company purchasing: a research agenda. *Journal of Purchasing & Supply Management*, 12(5), 272-283.
- Ellram, L., & Billington, C. (2001). Purchasing leverage considerations in the outsourcing decision. *European Journal of Purchasing & Supply Management*, 7, 15-27.
- Ellram, L. M. (1996). The use of the case study method in logistics research. *Journal of Business Logistics*, 17(2), 93-138.
- Ellram, L. M., & Carr, A. (1994). Strategic purchasing: a history and review of the literature. *International Journal of Purchasing and Materials Management*, 30(2), 10-18.
- Ellram, L. M., Tate, W. L., & Billington, C. (2008). Offshore outsourcing of professional services: a transaction cost economics perspective. *Journal of Operations Management*, 26(2), 148-163.
- Ellram, L. M., Zsidisin, G., Siferd, S., & Stanly, M. (2002). The impact of purchasing and supply management activities on corporate success. *The Journal of Supply Chain Management*, 38(1), 4-17.
- Ennis, S. (1999). Growth and the small firms: using causal mapping to assess decision making. *Qualitative Market Research*, 12(2), 147-160.
- Ernst, V., & Bas, D. (2003). Customs-related transaction costs, firm size, and international trade intensity. *Small Business Economics*, 21, 257-271.
- Essig, M. (2000). Purchasing consortia as symbiotic relationships: developing the concept of 'consortium sourcing'. *European Journal of Purchasing & Supply Management*, 6(1), 13-22.
- Fenstermacher, K. D., & Zeng, D. D. (2000). *Know your supply chain: transactional knowledge and beyond*. Paper presented at the American Association for Artificial Intelligence 2000 Workshop, Austin, TX.
- Finley, L. (1984). Can your small company acquire resources as favorably as the large company? *American Journal of Small Business*, 9(1), 19-25.
- Flint, D. J., Woodruff, R. B., & Gardial, S. F. (2002). Exploring the phenomenon of customers desired value change in a business-to-business context. *Journal of Marketing*, 66(4), 102-117.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 29-50.
- Foster, T. A., & Muller, E. J. (1990). Third parties: your passport to profits. *Distribution*, October, 30-32.

- Foulds, L. R., & Luo, Y. (2006). Value-added services for sustainable third-party warehousing. *International Journal of Logistics Systems and Management*, 2(2), 194-216.
- Fuller, J. B., O'Connor, J., & Rawlinson, R. (1993). Tailored logistics: the next advantage. *Harvard Business Review*, May-June, 87-97.
- Gadde, L. E., & Hulthen, K. (2009). Improving logistics outsourcing through increasing buyer-provider interaction. *Industrial Marketing Management*, 38(6), 633-640.
- Gattorna, J., Day, A., & Hargreaves, J. (1991). Effective logistics management. *Logistics Information Management*, 4(2), 2-86.
- Grant, N. (1997). Price driven. *Management*, September, 80-83.
- Goldsby, T. J., & Eckert, J. A. (2003). Electronic transportation marketplaces: a transaction cost perspective. *Industrial Marketing Management*, 32(3), 187-198.
- Griffis, S. E., Cooper, M., Goldsby, T. J., & Closs, D. J. (2004). Performance measurement: measure selection based upon firm goals and information reporting needs. *Journal of Business Logistics*, 25(2), 95-109.
- Grover, V., & Malhotra, M. K. (2003). Transaction cost framework in operations and supply chain management research: theory and measurement. *Journal of Operations Management*, 21(4), 457-473.
- Gotzamani, K., Longinidis, P., & Vouzas, F. (2010). The logistics services outsourcing dilemma: quality management and financial performance perspective. *Supply Chain Management: An International Journal*, 15(6), 438-453.
- Gruijssen, F., Cools, M., & Dullaert, W. (2007). Horizontal cooperation in logistics: opportunities and impediments. *Transportation Research Part E*, 43(2), 129-142.
- Gunasekaran, A., Forker, L. and Kobu, B. (2000). Improving operations performance in a small company. *International Journal of Operations and Production Management*, 20(3), 316-336.
- Hagedoorn, J., & Schakenraad, J. (1994). The effect of strategic technology alliances on company performance. *Strategic Management Journal*, 15(4), 291-309.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice-Hall International Inc.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1992). *Multivariate data analysis with readings*. New York: Macmillan Publishing Company.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Pearson Education Inc.
- Harland, C., Lamming, R., & Cousins, P. (1999). Developing the concept of supply strategy. *International Journal of Operations & Production Management*, 19(7), 650-673.
- Hamdan, A., & Rogers, K. J. (2008). Evaluating the efficiency of 3PL logistics operations. *International Journal of Production Economics*, 113(1), 235-244.
- Hanna, J. B., & Maltz, A. (1998). LTL expansion into warehousing: a transaction cost analysis. *Transportation Journal*, 38(2), 5-17.
- Harmsen, H., & Jensen, B. (2004). Identifying the determinants of value creation in the market: a competence-based approach. *Journal of Business Research*, 57(5), 533-547.
- Harrington, L. (1995). Small companies: find logistics tools. *Transportation and Distribution*, 36(3), 55-60.

- Heide, J. B., & John, G. (1988). The role of dependence balancing in safeguarding transaction-specific assets in conventional channels. *Journal of Marketing*, 52(1), 20-35.
- Heinritz, S., Farrell, P. V., Giunipero, L., & Kolchin, M. (1991). *Purchasing: principles and application* (8th ed.). Englewood Cliffs: Prentice-Hall.
- Hendrick, T. E. (1997). *Purchasing consortiums: horizontal alliances among firms buying common goods and services: what? Who? Why? How?* Centre for Advanced Purchasing Studies (CAPS) Research, Tempe, AZ.
- Hennart, J. F. (1991). The transaction costs theory of joint ventures: an empirical study of Japanese subsidiaries in the United States. *Management Science*, 37(4), 483-497.
- Hindson, D. (2007). 3PLs-adapting to a changing landscape. *Logistics and Transport Focus*, 9(7), 32-34.
- Hobbs, J. E. (1996). A transaction cost approach to supply chain management. *Supply Chain Management: an International Journal*, 1(2), 15-27.
- Hoegl, M., & Wagner, S. M. (2005). Buyer-supplier collaboration in product development projects. *Journal of Management*, 31(4), 530-548.
- Hofer, A. R., Knemeyer, M., & Dresner, M. E. (2009). Antecedents and dimensions of customer partnering behaviour in logistics outsourcing relationships. *Journal of Business Logistics*, 30(2), 141-159.
- Hoffmann, W. H., & Schlosser, R. (2001). Success factors of strategic alliances in small and medium-sized enterprises - an empirical survey. *Long Range Planning*, 34, 357-381.
- Holcomb, T. R., & Hitt, M. A. (2007). Toward a model of strategic outsourcing. *Journal of Operations Management*, 25(2), 464-481.
- Holland, J., & Ramazanoglu. (1994). *Researching women's lives from a feminist perspective*. London: Taylor & Francis.
- Holter, A. R., Grant, D. B., Ritchie, J., & Shaw, N. (2008). A framework of purchasing transport services in small and medium size enterprises'. *International Journal of Physical Distribution and Logistics Management*, Vol. 38, No. 1, pp. 21-38.
- Hong, J., Chin, A. T. H., & Liu, B. (2007). Logistics service providers in China. *Asia Pacific Journal of Marketing and Logistics*, 19 (2), 168-181.
- Hong, J. J., Chin, A. T. H., & Liu, B. (2004a). Logistics outsourcing by manufacturers in China: a survey of the industry. *Transportation Journal*, 43(1), 17-25.
- Hong, J. J., Chin, A. T. H., & Liu, B. (2004b). Firm-specific characteristics and logistics outsourcing by Chinese manufacturers. *Asia Pacific Journal of Marketing and Logistics*, 16(3), 23-36.
- Hong, J., & Liu, B. (2007). Logistics development in China: a provider perspective. *Transportation Journal*, 46 (2), 55-65.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modeling: guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Hudson, R. L., & McArthur, A. W. (1994). Contracting strategies in entrepreneurial and established firms. *Entrepreneurship Theory and Practice*, 18(3), 43-59.
- Inland Revenue. (2010). *Inland Revenue's compliance focus 2009-2010*. Retrieved 20 May, 2012, from <http://www.ird.govt.nz/resources/4/d/4d9dd2004e687633aa24ae4bfdc4072d/compliance-focus-2009-10.pdf>

- Jack, W., & Suri, T. (2011). *Risk sharing and transaction costs: evidence from Kenya's mobile money revolution*. Working paper.
- Jiang, B., & Prater, E. (2002). Distribution and logistics development in China: the revolution has begun. *International Journal of Physical Distribution & Logistics Management*, 32(9), 783-398.
- John, G., & Weitz, B. A. (1988). Forward integration into distribution: an empirical test of transaction cost analysis. *Journal of Law, Economics, and Organization*, 4(2), 121-139.
- Johnson, P. F., Klassen, R., Leenders, M., & Fearson, H. (2002). Determinants of purchasing team usage in the supply chain. *Journal of Operations Management*, 20(1), 77-89.
- Jones, J. (2006, December 13). *Questionnaire design and interviewing skills*. Lecture presented for research methodology lectures in Warwick Manufacturing Group, Warwick University, Coventry, UK.
- Kaiser, H. F. (1970). A second-generation little Jiffy. *Psychometrika*, 35(4), 401-415.
- Kennedy, G. (1998). Linfox converts carplant to multi-user warehouse. *The National Business Review*, September 18, 68.
- Kirk, J., & Miller, M. L. (1986). *Reliability and validity in qualitative research*. Beverly Hills: Sage Publications.
- Klein, B., Crawford, R., & Alchian, A. (1978). Vertical integration: appropriate rents and the competitive contracting process. *Journal of Law and Economics*, 21(2), 279-326.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd Ed.). New York: The Guilford Press.
- Knemeyer, A. M., & Murphy, P. R. (2005). Is the glass half full or half empty? An examination of user and provider perspectives towards third-party logistics relationships. *International Journal of Physical Distribution & Logistics Management*, 35(10), 708-727.
- Kogut, B. (1988). Joint ventures: theoretical and empirical perspectives. *Strategic Management Journal*, 9(4), 319-332.
- Kotzan, H., Seuring, S., Müller, M., & Reiner, G. (2005). *Research methodologies in supply chain management*. New York: Physica-Verlag.
- Krakovics, F., Leal, J. E., Mendes, P. J., & Santos, R. L. (2008). Defining and calibrating performance indicators of a 4PL in the chemical industry in Brazil. *International Journal of Production Economics*, 115(2), 502-514.
- Lai, F., Griff, M., & Babin, B. (2009). How quality, value, image, and satisfaction create loyalty at a Chinese telecom. *Journal of Business Research*, 62 (10), 980-986.
- Laing, A., & Cotton, S. (1997). Patterns of inter-organisational purchasing-evolution of consortia-based purchasing amongst GP fundholders. *European Journal of Purchasing & Supply Management*, 3(2), 83-91.
- Langley, J., & Capgemini. (2013). 2013 *Third-party logistics study: the state of logistics outsourcing*. Retrieved 23 January, 2013, from [http://www.verkehrsrundschau.de/sixcms/media.php/4513/2013\\_Third-Party\\_Logistics\\_Study.pdf](http://www.verkehrsrundschau.de/sixcms/media.php/4513/2013_Third-Party_Logistics_Study.pdf)
- Langley, C. John, Jr., Erik, V. D., Tony, R., Ulrik, T., Gary, R. A., & Scott, R. S. (2006). *Third party logistics: results and findings of the 11<sup>th</sup> Annual Study*, C. John Langley, Jr. and Capgemini LLC.
- Lambert, D. M., Emmelhainz, M. A., & Gardner, J. T. (1999). Building successful logistics partnerships. *Journal of Business Logistics*, 20 (1), 165-181.

- Larsen, T. S. (2000). Third-party logistics from an interorganizational point of view. *International Journal of Physical Distribution & Logistics Management*, 30(2), 112-127.
- Lau, K. H., & Wang, Y. (2009). Reverse logistics in the electronic industry of China: a case study. *Supply Chain Management*, 14(6), 447-465.
- Lau, K. H., & Zhang, J. (2006). Drivers and obstacles of outsourcing practices in China. *International Journal of Physical Distribution and Logistics Management*, 36 (10), 776-792.
- Leonard, J. (2013). Transaction cost economics. In Wikinson, T. J., & Kannan, V (Eds.), *Strategic management in the 21<sup>st</sup> century* (pp. 65-90, volume 3). California: Praeger.
- Levy, D. T. (1985). The transaction cost approach to vertical integration: an empirical examination. *Review of Economics and Statistics*, 67, 438-445.
- Lieb, R. C. (1992). The use of third party logistics services by large American manufacturers. *Journal of Business Logistics*, 13(2), 29-42.
- Lieb, R. C., & Bentz, B. A. (2005). The use of 3PL services by large American manufacturers: the 2004 survey. *Transportation Journal*, 44(2), 5-15.
- Lieb, R. C., Millen, R. A., & Wassenhove, L. N. V. (1993). Third party logistics services: a comparison of experienced American and European manufacturers. *International Journal of Physical Distribution and Logistics Management*, 23(6), 35-44.
- Lieb, R. C., & Randall, H. L. (1999). 1997 CEO perspectives on the current status and Future prospects of the third party logistics industry in the United States. *Transportation Journal*, Spring, 28-41.
- Liker, J. K., & Choi, T. Y. (2004). Building deeper supplier relationships. *Harvard Business Review*, December, 104-113.
- Loehlin, J. C. (1998). *Latent variable models: an introduction to factor, path, and structural analysis*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lohman, C., Fortuin, L., & Wouters, M. (2004). Designing a performance measurement system: a case study. *European Journal of Operational Research*, 156(2), 267-286.
- Lonsdale, C. (2001). Locked-in supplier dominance: on the dangers of asset specificity for the outsourcing decision. *Journal of Supply Chain Management*, 37(2), 22-27.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1(2), 130-149.
- Macie, K. E. (1996). What's the difference? Through they have a common aim to save money, the cooperative and the consortium represent two different structures. *Purchasing Today*, 7(5), 20-23.
- Maltz, A. (1994). Outsourcing the warehousing function: economic and strategic considerations. *The Logistics and Transportation Review*, 30(3), 245-265.
- Maltz, A. (1993). Private Fleet Use: A Transaction Cost Model. *Transportation Journal* (American Society of Transportation & Logistics Inc), 32(3), 46-53.
- Manzini, R., Pareschi, A. and Persona, A. (2007). Logistics outsourcing: an examination of third-party providers. *International Journal of Logistics Systems and Management*, 3(2), 135-157.
- Martin, O. (1995). E-mail surveys-potentials and pitfalls. *Marketing research*, 7(3), 28-34.

- Masten, S. E. (1984). The organization of production: evidence from the aerospace industry. *Journal of Law and Economics*, 27(2), 403-417.
- Masten, S. E., Meehan, J. W., & Snyder, E. A. (1991). The costs of organization. *Journal of Economic Behaviour and Organization*, 7(1), 1-25.
- McIvor, R. (2009). How the transaction cost and resource-based theories of the firm inform outsourcing evaluation. *Journal of Operations Management*, 27 (1), 45-63.
- Mentzer, J. T., Myers, M. B., & Stank, T. P. (2007). *Handbook of global supply chain management*. Thousand Oaks: Sage Publications.
- Modarress, B., Ansari, A., & Lockwood, A. (2010). Outsourcing logistics to third-party providers: practitioners' perspectives. *International Journal of Logistics Systems and Management*, 6(1), 23-37.
- Möller, K., & Törrönen, P. (2003). Business suppliers' value creation potential: a capability-based analysis. *Industrial Marketing Management*, 32(2), 109-118.
- Mudambi, R., Schrunder, C. P., & Mongar, A. (2004). How co-operative is co-operative purchasing in smaller firms? Evidence from UK engineering SMEs. *Long Range Planning*, 37(1), 85-102.
- Mulaik, S. A., James, L. R., Van Alstine, J., Bennet, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of Goodness-of-Fit indices for structural equation models. *Psychological Bulletin*, 105(3), 430-445.
- Myers, M. (2009). *Qualitative research in business & management*. London: SAGE Publications Ltd.
- Nam, K., Rajagopalan, S., Rao, R. H., & Chaudhury, A. (1996). A two level investigation of information systems outsourcing. *Communications of the ACM*, 39(7), 36-44.
- Narasimhan, R., & Jayaram, J. (1998). Causal linkages in supply chain management: an exploratory study of North American manufacturing firms. *Decision Sciences*, 29(3), 579-605.
- Nollet, J., & Beaulieu, M. (2005). Should an organization join a purchasing group? *Supply Chain Management: An International Journal*, 10(1), 11-17.
- Novak, S., & Eppinger, S. D. (2001). Sourcing by design: product complexity and the supply chain. *Management Science*, 47(1), 189-204.
- Nunally, J. C. (1978). *Psychometric theory*. New York: McGraw-Hill.
- New Zealand Inland Revenue. (2010). *Compliance focus 2010-2011*. Retrieved 1<sup>st</sup> Jan, 2013, from <http://www.ird.govt.nz/resources/3/c/3cffb480433082bf90f6f75d5f60e4be/our-compliance-focus-2010-11.pdf>
- New Zealand Ministry of Foreign Affairs and Trade. (2013). *New Zealand and China*. Retrieved 23 January, 2013, from <http://www.nzembassy.com/china/relationship-between-new-zealand-and-china/new-zealand-and-china>
- NZBusiness. (2009). *Import fundamentals*. Retrieved 23 January, 2013, from <http://nzbusiness.co.nz/articles/import-fundamentals>
- Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. London: Continuum.
- O'Regan, N., Ghobadian, A., & Galleary, D. (2006). In search of the drivers of high growth in manufacturing SMEs. *Technovation*, 26(1), 30-41.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information Systems Research*, 2(1), 1-28.

- Pagrach, L. J., Wesselink, R., Mulder, M., Brujstiens, J., Chr, J., & van der Spa, M. (2000). *Profiles in the purchasing profession: from professional profiles to exams*. Netherlands: Wageningen University.
- Panayides, P. M., & So, M. (2005). Logistics service provider – client relationships. *Transportation Research Part E*, 41, 179-200.
- Papke-Shields, K. E., Malhotra, M. J., & Grover, V. (2002). Strategic manufacturing planning systems and their linkage to planning system success. *Decision Sciences*, 33(1), 1-30.
- Park, D., & Krishnan, H. A. (2001). Supplier selection practices among small firms in the United States: testing three models. *Journal of Small Business Management*, 39(3), 259-271.
- Patry, M., Tremblay, M., Lanoie, P., & Lacombe, M. (1999). Why firms outsource their human resource activities: an empirical analysis. *Working Paper*, Centre Universitaire de Recherche et Analyse des Organisations (CIRANO), Montréal, Août.
- Pearson, J. N., & Ellram, L. M. (1995). Supplier selection and evaluation in small versus large electronics firms. *Journal of Small Business Management*, 33(4), 53-65.
- Podaskoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: problem and prospects. *Journal of Management*, 12(4), 531-544.
- Polychronakis, Y., & Syntetos, A. (2007). Soft supplier management related issues: an empirical investigation. *International Journal of Production Economics*, 106(2), 431-449.
- Poppo, L., & Zenger, T. (1998). Testing alternative theories of the firm: transaction cost, knowledge-based, and measurement explanations for make-or-buy decisions in information services. *Strategic Management Journal*, 19(9), 853-877.
- Porter, M. E. (1985). *Competitive advantage: creating and sustaining superior performance*. New York: The Free Press.
- Power, D., Sharafali, M., & Bhakoo, V. (2007). Adding value through outsourcing: contribution of 3PL services to customer performance. *Management Research News*, 30(3), 228-235.
- Pressey, A. D., Winklhofer, H. M., & Tzokas, N. X. (2009). *Purchasing practices in small-to medium-sized enterprises: an examination of strategic purchasing adoption, supplier evaluation and supplier capabilities*. *Journal of Purchasing & Supply Management*, 15(4), 214-226.
- Pring, B. (2006). *Procurement BPO holds promise but needs help to achieve efficiencies* (ID Number: G00138866). Retrieved from Gartner.
- Quayle, M. (2003). A study of supply chain management practice in UK industrial SMEs. *Supply Chain Management: an International Journal*, 8(1), 79-86.
- Quayle, M. (2002a). Purchasing in small firms. *European Journal of Purchasing and Supply Management*, 8(3), 151-159.
- Quayle, M. (2002b). Supplier development and supply chain management in small and medium size enterprises. *International Journal of Technology Management*, 23(1), 172-188.
- Quayle, M. (1998) 'Industrial procurement: factors affecting sourcing decisions', *European Journal of Purchasing and Supply Management*, 4(4), 199-205.
- Rabinovich, E. (1999). Outsourcing of integrated logistics functions. *International Journal of Physical Distribution and Logistics Management*, 29(6), 353-373.

- Rabinovich, E., Knemeyer, A. M., & Mayer, C. M. (2007). Why do Internet commerce firms incorporate logistics service providers in their distribution channels? The role of transaction costs and network strength. *Journal of Operations Management*, 25(3), 661-681.
- Radner, R. (1968). Competitive equilibrium under uncertainty. *Econometrica*, 36, 31-58.
- Rahman, S. (2008). Quality management in logistics services: a comparison of practices between manufacturing companies and logistics firms in Australia. *Total Quality Management and Business Excellence*, 19(5), 535-550.
- Rahman, S., & Wu, Y. J. (2011). Logistics outsourcing in China: the manufacturer-cum-supplier perspective. *Supply Chain Management: An International Journal*, 16(6), 462-473.
- Ramsay, J. (1994). Purchasing power. *European Journal of Purchasing and Supply Management*, 1(3), 125-138.
- Reeves, K. A., Caliskan, F., & Ozcan, O. (2010). Outsourcing distribution and Logistics services within the automotive supplier industry. *Transportation Research Part E*, 46, 459-468.
- Richardson, H. L. (1992). Outsourcing: the power worksource. *Transportation & Distribution*, 33(7), 22-24.
- Rindfleisch, A., & Heide, J. B. (1997). Transaction cost economics: past, present, and future applications. *Journal of Marketing*, 61(4), 30-54.
- Routroy, S. (2009). Selection of third party logistics provider in supply chain. *International Journal of Services Technology and Management*, 12(1), 23-34.
- Rozemeijer, F. (2000). How to manage corporate purchasing synergy in a decentralised company? Towards design rules for managing and organizing purchasing synergy in decentralised companies. *European Journal of Purchasing & Supply Management*, 6(1), 5-12.
- Rushton, A., Oxley, J., & Croucher, P. (2000). *The handbook of logistics and distribution management* (2nd ed.). London: Kogan Limited.
- Sahay, B. S., & Mohan, R. (2006). 3PL practices: an Indian perspective. *International Journal of Physical Distribution & Logistics Management*, 36(9), 666-689.
- Salleh, A. L., Arabia, S., & Dali, A. (2009). Third party logistics service providers and logistics outsourcing in Malaysia. *The Business Review*, 13(1), 264-270.
- Sanders, N. R., Locke, A., Moore, C. B., & Autry, C. W. (2007). A multidimensional framework for understanding outsourcing arrangements. *Journal of Supply Chain Management*, 43(4), 3-15.
- Sankaran, J. (2000). Freight logistics in the New Zealand context. *International Journal of Physical Distribution and Logistics Management*, 30(2), 145-164.
- Sankaran, J., Mun, D., & Charman, Z. (2002). Effective logistics outsourcing in New Zealand: an inductive empirical investigation. *International Journal of Physical Distribution and Logistics Management*, 32(8), 682-702.
- Sarkar, M. B., Echambadi, R., Cavusgil, S. T., & Aulakh, P. S. (2001). The influence of complementarity, compatibility, and relationship capital on alliance performance. *Journal of the Academy of Marketing Science*, 29(4), 358-373.
- Scheneller, E. S. (2000). *The value of group purchasing in the health care supply chain, school of Health Administration and Policy*. Retrieved 30 June, 2012, from <https://www.novationco.com/media/industryinfo/GroupPurchasing.pdf>.
- Schmoltzi, C., & Wallenburg, C. M. (2010). Horizontal cooperation between logistics service providers: motives, structure, performance. *International Journal of Physical Distribution & Logistics Management*, 41(6), 552-576.

- Schotanus, F., Telgen, J., & Boer, L. D. (2009). Critical success factors for managing purchasing groups. *Journal of Purchasing & Supply Management*, 16(1), 51-60.
- Scully, J. I. & Fawcett, S. E. (1994). International procurement strategies: challenges and opportunities for the small firm. *Production and Inventory Management Journal*, 35(2), 39-46.
- Segars, A. H., & Grover, V. (1998). Strategic information systems planning success: an investigation of the construct and its measurement. *MIS Quarterly*, 22(2), 139-163.
- Sheffi, Y. (1990). Third party logistics: present and future prospects. *Journal of Business Logistics*, 11(2), 27-39.
- Shelanski, H., & Klein, P. G. (1995). Empirical research in transaction cost economics: a review and assessment. *Journal of Law, Economics, and Organisation*, 11(2), 335-361.
- Shen, S. J. (2000). The analysis of supply and demand in China's logistics market. *Logistics Technology and Applications*, 5(2), 5-11.
- Shevlin, M., Miles, J. N. V., & Lewis, C. A. (2000). Reassessing the fit of the confirmatory factor analysis of the multidimensional students life satisfaction scale: comments on confirmatory factor analysis of the multidimensional student's life satisfaction scale. *Personality and Individual Differences*, 28, 181-185.
- Shi, Y., & Arthanari, T. (2011). Outsourcing purchasing services by third party logistics providers: a conceptual model. *International Journal of Logistics Systems and Management*, 10(4), 398-419.
- Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2008). *Designing And Managing The Supply Chain: Concepts, Strategies, and Case Studies* (3rd ed.). Boston: McGraw-Hill/Irwin.
- Simon, H. (1961). *Administrative Behavior* (2<sup>nd</sup> ed.). New York: Macmillan.
- Sink, H. L., & Langley, C. J. (1997). A managerial framework for the acquisition of third-party logistics services. *Journal of Business Logistics*, 18(2), 163-189.
- Sink, H. L., & Langley, C. J., & Gibson, B. J. (1996). Buyer observations of the US third-party logistics market. *International Journal of Physical Distribution and Logistics Management*, 26(3), 38-46.
- Smyth, H. (2005). Procurement push and marketing pull in supply chain management: the conceptual contribution of relationship marketing as a driver in project financial performance. *Journal of Financial Management of Property and Construction*, 10 (1), 33-44.
- Sohail, M. S. Bhatnagar, R., & Sohal, A. S. (2006). A comparative study on the use of third party logistics services by Singaporean and Malaysian firms. *International Journal of Physical Distribution and Logistics Management*, 36(9), 690-701.
- Sowinski, L. L. (2005). Taking advantage of expanding 3PL services. *World Trade*, 18(7), 44.
- Spear, B. (1997). Logistics: Key to corporate strategy. *Transportation and Distribution*, 38(5), 69-72.
- Speece, W. M., & Yukiko, K. (1995). Transportation in China in the 1990s. *International Journal of Physical Distribution & Logistics Management*, 25(8), 53-71.
- Spekman, R. E., Kamauff, J. W., & Myhr, N. (1998). An empirical investigation into supply chain management: a perspective on partnership. *Supply Chain Management*, 3(2), 53-67.

- Statistics New Zealand. (2012). *New Zealand in Profile in 2012*. Retrieved 23 January, 2013, from <http://www.stats.govt.nz/~media/Statistics/browse-categories/snapshots-of-nz/nz-in-profile/2012/nzip-2012.pdf>
- Stratman, J. K. (2008). Facilitating offshoring with enterprise technologies: reducing operational friction in the governance and production of services. *Journal of Operations Management*, 26(2), 275-287.
- Stump, R. L. (1995). Antecedents of purchasing concentration: a transaction cost explanation. *Journal of Business Research*, 34, 145-157.
- Tella, E., & Virolainen, V. M. (2005). Motives behind purchasing consortia. *International Journal of Production Economics*, 93-94 (8), 161-168.
- Tian, Y., Ellinger, A. E., & Chen, H. (2010). Third-party logistics provider customer orientation and customer firm logistics improvement in China. *International Journal of Physical Distribution & Logistics Management*, 40(5), 356-376.
- Tian, Y., Lai, F., & Daniel, F. (2008). An examination of the nature of trust in logistics outsourcing relationship: empirical evidence from China. *Industrial Management & Data Systems*, 108(3), 346-367.
- Tore, E., & Magnus, J. (2004). Is there a hold-up problem? *Scandinavian Journal of Economics*, 106(3), 475-494.
- Tregoe, B. J. (1983). Questioning: the key to effective problem solving and decision making. In B Taylor and G. Lippitt (ed.), *Management Development and Training Handbook* (2nd ed.). London: McGraw-Hill.
- Trent, R. J., & Monczka, R. M. (1998). Purchasing and supply management: trends and changes throughout the 1990s. *International Journal of Purchasing and Materials Management*, 34(4), 2-11.
- Trunick, P. A. (1989). Outsourcing: a single source for many talents. *Transportation & Distribution*, July, 20-23.
- Tsai, M., Liao, C., & Han, C. (2008). Risk perception on logistics outsourcing of retail chains: model development and empirical verification in Taiwan. *Supply Chain Management: an International Journal*, 13(6), 415-424.
- Tyndall, G., Gopal, C., Patsch, W., & Kamauff, J. (1998). Ten strategies to enhance supplier management. *National Productivity Review*, 17(3), 31-44.
- Vangen, S., & Huxham, C. (2003). Nurturing collaborative relationships: building trust in interorganizational collaboration. *Journal of Applied Behavioral Science*, 39(1), 5-31.
- van Hoek, R. I. (2000). The purchasing and control of supplementary third-party logistics services. *Journal of Supply Chain Management*, 36(4), 14.
- van Weele, A., & Rozemejier, F. (1996). Revolution in purchasing: building competitive power through proactive purchasing. *European Journal of Purchasing & Supply Management*, 2(4), 153-160.
- Verwaal, E., & Donkers, B. (2003). Customs-related transaction costs, firm size and international trade intensity. *Small Business Economics*, 21(3), 257-271.
- Verwaal, E., Verdu, A. J., & Recter, A. (2008). Transaction costs and organizational learning in strategic outsourcing relationships. *International Journal of Technology Management*, 41(1/2), 38-54.
- Vining, A., & Globerman, S. (1999). A conceptual framework for understanding the outsourcing decision. *European Management Journal*, 17(6), 645-654.
- Voss, C., Tsikriktsis, N., & Frohlich, M. (2002). Case research in operations management. *International Journal of Operations and Productions Management*, 22(2), 195-219.

- Walker, G., & Weber, D. (1987). Supplier competition, uncertainty, and make-or-buy decisions. *Academy of Management Journal*, 30(3), 589-596.
- Walker, G., & Weber, D. (1984). A transaction cost approach in make-or-buy decisions. *Administrative Science Quarterly*, 29(3), 373-391.
- Wang, P., Wee, C. H., & Koh, P. H. (1998). Control mechanisms, key personnel appointment control and performance of Sino-Singapore joint ventures. *International Business Review*, 7(4), 351-375.
- Wang, Q., Huo, B., Lai, F., & Chu, Z. (2010). Understanding performance drivers of third-party logistics providers in mainland China: A replicated and comparative study. *Industrial Management & Data Systems*, 110 (9), 1273-1296.
- Wang, Q., Zantow, K., Lai, F., & Wang, X. (2006). Strategic postures of third-party logistics providers in mainland China: a replicated and comparative study. *International Journal of Physical Distribution & Logistics Management*, 36(10), 793-819.
- Whinston, M. D. (2001). Assessing the property rights and transaction-cost theories of firm scope. *The American Economic Review*, 91(2), 184-188.
- Wiengarten, F., Fynes, B., & McKittrick, A. (2010). Collaborative supply chain practices and performance: exploring the key role of information quality. *Supply Chain Management: An International Journal*, 15(6), 463-373.
- Wilding, R., & Juriado, R. (2004). Customer perceptions on logistics outsourcing in the European consumer goods industry. *International Journal of Physical Distribution & Logistics Management*, 34(8), 628-644.
- Williamson, O. E. (2008). Outsourcing: transaction cost economics and supply chain management. *Journal of Supply Chain Management*, 44(2), 5-16.
- Williamson O. E. (1999). Strategy research governance and competence perspectives. *Strategic Management Journal*, 20(12), 1087-1108.
- Williamson, O. E. (1991). Comparative economic organization: the analysis of discrete structural alternatives. *Working paper*, University of California, Berkeley.
- Williamson, O. E. (1985). *The Economic institutions of capitalism*. New York: Free Press.
- Williamson, O. E. (1981). The modern corporation: origins, evolution, attributes. *Journal of Economic Literature*, 19(4), 1537-1568.
- Williamson, O. E. (1975). *Market and hierarchies: analysis and antitrust implications*. New York: Free Press.
- Wilson, M. J., & Roy, R. Y. (2009). Enabling lean procurement: a consolidation model for small- and medium- sized enterprises. *Journal of Manufacturing Technology Management*, 20(6), 817-833.
- Xie, S., & Wu, J. (2007). The advantage of theory analysis for third party purchase: questions and innovation. *Purchasing & Supply Management (Chinese)*, 11, 28-29.
- Xie, S., & Zhang, H. (2008). The exploration of third party purchase. *Purchasing & Supply Management (Chinese)*, 1, 30-32.
- Yin, R. K. (2003). *Case study research: design and methods*. Thousand Oaks, CA: Sage Publications.
- Young, S. C. (1989). Prime vendor/hospital purchasing relationship. *International Journal of Physical Distribution & Logistics Management*, 19(9), 27-30.

- Zhao, X., Huo, B., Flynn, B. B., & Yeung, J. H. Y. (2008). The impact of power and relationship commitment on the integration between manufactures and customers in a supply chain. *Journal of Operations Management*, 26(3), 368-388.
- Zhao, Z., Flynn, B. B., & Roth, A. V. (2006). Decision sciences research in China: a critical review and research agenda – foundations and overview. *Decision Sciences*, 37 (4), 451-496.
- Zheng, J., Knight, L., Harland, C., Humby, S., & James, K. (2007). An analysis of research into the future of purchasing and supply management. *Journal of Purchasing and Supply Management*, 13(1), 69-83.
- Zhou, G., Min, H., Xu, G., & Cao, Z. (2008). Evaluating the comparative efficiency of Chinese third-party logistics providers using data development analysis. *International Journal of Physical Distribution and Logistics Management*, 38 (4), 262-279.
- Zweig, P. L., & Zellner, W. (1998). Locked out of the hospital. *Business Week*, 3569(16), 75-76.