

Paper Title:

Selection criteria for South African third-party logistics service providers

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ABSTRACT

Purpose

The purpose of this paper is two-fold: firstly, to determine the critical selection criteria for the creation of an index to evaluate third-party logistics service providers (3PLs) in South Africa and secondly, to determine whether industry differences exist with regard to the selection criteria.

Design/methodology/approach

Survey data were collected from 103 Top 500 Companies in Africa that use 3PLs and within the industrial sectors that mostly outsource logistics services in South Africa. Seven groups of 3PL selection criteria, with a total of 44 3PL selection criteria were surveyed and ranked. Subsequently, a comparison of selection criteria by industrial sector was made.

Findings

From respondents' rating of the individual 3PL selection criteria in the seven categories, the top three categories are: cost and price structure, service delivery and the relationship with the 3PL. Results suggested no significant differences in the rating of categories of 3PL selection criteria by industry sectors.

Research limitations/implications

Empirical data were collected in a single country (South Africa) and at one point in time. Larger sample sizes per industrial sector would have allowed more sector comparisons.

Practical implications

The critical logistics outsourcing selection criteria identified and ranked in this study can be used by practitioners to facilitate the process of evaluating and ranking 3PLs prior to contracting.

Originality/value

From the 3PL selection criteria identified and ranked in this paper, a ranking index of 3PLs in South Africa can be developed and adapted by industrial sector.

Keywords:

Third party logistics, logistics service providers, selection criteria, 3PL index,

INTRODUCTION

South Africa's logistics costs are rising and expected to continue rising. According to the Logistics Barometer South Africa 2016 (Havenga, Simpson, King, de Bod, and Braun, 2016), in 2014, it was 11.2 percent of gross domestic product (R429 billion) and was forecast to reach 11.8 percent by 2016. Logistics costs have steadily increased since 2009, and are forecast to grow by 6.3 percent in 2016, in line with current inflation estimates. In an attempt to reduce cost and improve the effectiveness of logistics systems, business managers increasingly use third party logistics service providers (3PLs).

The demand for 3PLs has been driven by globalisation, technology, organisational consolidation, the empowered consumer and government policy and regulation (Coyle, Langley, Novack and Gibson, 2009:7). Effective and efficient logistics systems enable companies to improve customer service levels and gain a competitive advantage as a result of improved lead times and delivery (Diabat, Khreishah, Kannan, Panikar and Gunasekaran, 2013). Global trends suggest that companies prefer to focus on their core competencies and outsource their supply chain activities, including procurement, warehousing and distribution (Piplani, Pokharel and Tan, 2004). Globally the 3PL industry has grown rapidly (Armstrong & Associates, 2014:8) offering a range of services, adding to warehousing, logistics and freight forwarding (Langley & Capgemini, 2014), value-add services, such as order management and fulfilment, information technology (IT) services and supply chain consultancy. Since supply chains have become more complex, the need to outsource has increased to obtain a cost advantage, improve quality, fill capability or capacity gaps and realise economies of scale.

The process of outsourcing of logistics services comprises sourcing, appraising and selecting a suitable 3PL. Gartner (2013) and Armstrong & Associates (2013 & 2014) conducted surveys to rank 3PLs. Based on 3PL service provider's capabilities to provide innovative value-add services for the elimination of waste in the supply chains, Gartner (2013) developed the "Magic quadrant for global 3PL providers". He classified 3PL service providers into four quadrants: challengers, players, niche players and visionaries. Using the magic quadrant as a tool to assess the capabilities of 3PL service providers, assisted logistics managers when selecting a 3PL service provider (Gartner, 2013). In contrast, Armstrong & Associates (2014) base their rankings on revenue generation as the main criterion. They publish annual reports, such as the Top 50 global 3PL service provider, Top 20 North American 3PL service provider and Top 30 United States domestic 3PL service providers. These reports rank 3PL service providers according to their revenue

generation, service area coverage, 3PL assets, information technology (IT), services and key customers.

PROBLEM INVESTIGATED

In South Africa there is no annual survey of 3PLs neither a 3PL index such as those developed by Gartner and Armstrong & Associates providing a ranked list or comparison of existing 3PLs.

The current absence of a valid comparison of the major and other 3PLs in South Africa, based on key outsourcing and ranking criteria, obfuscates the selection and contracting process. Therefore, a research need existed to identify key outsourcing criteria rated important by South African users of 3PL service providers when evaluating them. The first stage of the research to identify the relevant selection criteria has been reported in the article by Karrappan, Sishange, Swanepoel and Kilbourn (2017). Of the 44 selection criteria gleaned from literature, the authors reported only on the top 25 (ranked by mean value) included in a factor analysis. The article did not report the results on all 44 selection criteria. In this article the results on all 44 selection criteria are reported as it provides a more comprehensive understanding of the evaluation of the selection criteria. In addition, the possibility of differences between industrial sectors in the importance rating of 3PL selection criteria is explored. With such information as a foundation a future ranking index for 3PL service providers in South Africa can be conceptualised and tested and even compiled per industry sector.

LITERATURE REVIEW

Organisations in most major industrial sectors outsource to 3PLs to reduce costs, improve customer service levels, increase operational flexibility, enhance their ability to focus on their core business by outsourcing non-core activities (Wanke, 2012:2424; Chen, Tian, Ellinger and Daugherty, 2010); convert fixed costs into variable costs (Bayazit and Karpak, 2013); and achieve strategic objectives (Qureshi, Abdelhadi and Shakoor, 2014:7).

Logistics outsourcing is defined as “a provision of a single or multiple logistics services by a vendor on a contractual basis” (Mothilal, Gunasekaran, Nachiappan and Jayaram, 2012:2409). In the 18th Annual Third-party Logistics Study (Langley and Capgemini, 2014), global shippers indicated the services most commonly outsourced (primary category) are grouped under operational and repetitive activities and include: domestic and international transportation (81% and 78% respectively), warehousing (73%), freight forwarding (62%) and customs brokerage (57%). In addition they specified that several value-added services (second category) are outsourced; such as cross docking (36%), reverse logistics (36%), freight-bill auditing (33%),

product labelling and packaging (32%), transportation planning and management (28%) and supply chain consultancy services (25%). In the last category, strategic and information technology (IT) intensive services are cautiously outsourced. Langley and Capgemini (2014) measured the tangible benefits to shippers outsourcing to 3PLs, such as reductions in logistics costs, inventory costs and logistics fixed asset values, with an improvement in order fill rate and order accuracy.

3PL service provider indexes – comparative analyses

Global researchers, including (but not limited to) Armstrong & Associates and Capgemini Consulting, have published 3PL indexes to rank international 3PLs. Of the best known reports are the Armstrong & Associates (2014) global reports that rank international 3PLs operating across various continents. The reports include information on various attributes and services of the 3PLs, namely: 3PL turnover; Service area; 3PL assets; Information systems; Services; and Key customers. The reports focus specifically on North and South America, Asia and Europe with very little or no information on Africa or South Africa in particular. In addition, a literature review revealed that there is no published 3PL Index for South Africa. Although these indexes, such as those from Armstrong & Associates, enable users of 3PLs to critically compare the different 3PLs to make informed decisions at a strategic level about logistics outsourcing to 3PL service providers, additional information is needed to operationalise their outsourcing strategies. Such additional information would include 3PL selection and ranking criteria to enable the selection of a suitable 3PL as a partner.

3PL service provider selection criteria

Aguezzoul (2014) reviewed the ‘Third party logistics selection problem’ in 67 articles published within the 1994–2013 period. He found that 3PL selection is empirical in nature and varies per region/country, industrial sector, and logistics activities outsourced. Thus it is essential to determine for a specific country, such as South Africa, not only the relevant 3PL selection criteria for users of 3PLs in the country, but also per industrial sector. Aguezzoul (2014) identified 11 criteria that are deemed important when selecting a 3PL service provider, namely cost, relationship, services, quality, information equipment systems, flexibility, delivery, professionalism, financial position, location and reputation. Additional selection criteria were identified by Bayazit and Karpak (2013), Braglia and Petroni (2000), Menon, McGinnis and Ackerman (1998) and Qureshi *et al.* (2007). These authors identified 22 selection criteria of which 15 were identified by multiple authors: quality of service, information technology capability, delivery performance, trustworthiness, operational performance, compatibility, financial stability, geographic spread and range of services, long-term relationship, reputation, price and optimum cost, surge capacity, flexibility in operation and delivery, on-time delivery, low error rates, and

creative management. It follows that the nature of the criteria are both tangible and intangible. Although a broad set of 3PL selection criteria is available, it seems that no single criterion is sufficient for selection. It is therefore essential to identify and classify key criteria for the selection of a 3PL.

For comparative purposes, the development of the 3PL selection criteria for this study incorporated the attributes in Aguezzoul's (2014:75) definitions of the 11 key selection criteria.

Ranking the 3PL service provider selection criteria

In addition to identifying appropriate criteria for selecting 3PLs, such selection criteria should be ranked in terms of importance for 3PL users. An example of such a ranking is the 3PL survey conducted during the 13th Annual State of Logistics Outsourcing (IOMA, 2009:10-12), which ranked reputation, proven track record and industry expertise as the most important criterion at 51 percent, followed by cost savings and price (39%), ability to solve problems and partner with user (37%), flexibility (20%), technology (12%), infrastructure capabilities (10%) and financial stability (10%).

A study by Moberg and Speh (2004) focused on selection specifically for delivering warehouse functions among 155 firms and isolated 12 selection criteria used when choosing a 3PL. The top three are quality of management, track record and ability to provide value-added services. An even earlier study by Spencer, Rogers and Daugherty (1994) investigating the process of selecting a 3PL, surveyed 154 firms and identified 23 criteria, based on importance. The top three are on-time performance, service quality, and good communication.

For this study, 44 of the selection criteria identified by international researchers were used to ensure all criteria important in selecting a 3PL were included. These criteria were grouped into seven categories each containing several sub-criteria:

- Credentials of 3PLs (6 criteria)
- Potential relationship with 3PLs (5 criteria)
- Scope of services offered by 3PLs (8 criteria)
- Cost and pricing structure of 3PLs (5 criteria)
- Service delivery of 3PLs (5 criteria)
- 3PL resources and technical capability (9 criteria)
- Quality of 3PLs (6 criteria)

RESEARCH METHODOLOGY

Research methodology and design

A positivistic epistemology was adopted in this cross-sectional exploratory study (Saunders, Lewis and Thornhill, 2012), employing a quantitative method using a survey strategy and electronic structured questionnaires to identify the selection and ranking of outsourcing criteria. The questionnaire was pilot tested with 10 respondents and minor adjustments were made.

To collect appropriate data, the unit of analysis comprised companies that contract 3PLs. This required the identification of the industrial sectors that predominantly contract 3PLs. From telephonic interviews with the five top-ranked 3PLs ranked by Armstrong & Associates (2013) and operating in South Africa, and a further five well-known South African 3PLs, five industries that mostly contract 3PLs were identified. Only companies from these five industries appearing on the 'Top 500 Companies in Africa' (2013), were included in the target population, namely: energy/chemicals/gas (52); manufacturing – automotive and pharmaceuticals (46); mining and construction (36); technology and communication (44); and retail and fast moving consumer goods (fmcg) and perishables (47). Thus, the survey questionnaire was sent to the target population of 225 South African companies. To ensure compliance with the inclusive criterion, a filter question differentiated users of 3PLs from non-users, resulting in 103 (46%) valid responses.

RESULTS

Profile of respondents

The respondents were from the following industrial sectors: mining (27%), wholesale and retail (24%), manufacturing (21%), diversified (19%), construction (16%), telecoms and communication (8%), technology (7%) and other (7%). Their positions in the companies ranged from chief executive officers or general managers (6%), operations managers (5%), procurement (37%), supply chain (31%) to logistics (12%), with 'other in 3PL selection' (10%). Thus, it can be assumed that the respondents had the knowledge and/or experience to respond meaningfully.

From the 403 responses on types of logistic services outsourced, it seems that most of the respondents outsourced more than one service to 3PLs with the top five being: transportation (99%), customs clearance (83.5%), freight forwarding (83.5%), freight billing (70.9%) and warehousing (37.9%).

What follows is a discussion of the results of the study. It is important to note that in this survey, 3PL selection criteria were evaluated on both individual criterion level and on criteria category level. Furthermore, selection criteria categories were evaluated as both multi-dimensional constructs (category mean values determined based on the mean values of individual criterion assigned to a category and evaluated by means of one scale) and mono-dimensional constructs (category mean values determined by the evaluation of the category as a stand-alone item on a scale). This section concludes with an industry-specific comparison of 3PL selection criteria evaluations.

Selection criteria for 3PL outsourcing

The 44 selection criteria for 3PL outsourcing were grouped into seven categories. The importance of each criterion was rated on a 5-point Likert scale (1 = not important; 2 = moderately important; 3 = important; 4 = very important; 5 = extremely important). The Cronbach alpha values for the scales of the seven categories were as follows: A1 – .613 (after the deletion of one item), A2 – .652, A3 – .759, A4 – .636, A5 – .873, A6 – .848 and A7 – .899. Although Cronbach alpha values of less than 0.7 are considered low, Pallant (2007) advised that a low Cronbach alpha value is a common result for short scales (fewer than ten items). He recommended the consideration of the inter-item correlation mean for such scales. The optimal range of inter-correlation mean values is between 0.2 and 0.4 (Briggs and Cheek, 1986; cited by Pallant, 2007). The scales for categories A1 and A2 had acceptable inter-item correlation means ($\bar{x} = 0.246$, and $\bar{x} = 0.264$ respectively). Therefore all scales were considered reliable (after the removal of one item in category A1).

Of the six criteria (Table 1) in the Credentials of the service provider category (A1) two have mean scores greater than 4.0, namely Demonstration of innovation by the service provider (4.47) and Accessibility of top management (4.17). Of the five criteria in the Potential relationship with 3PL service provider category (A2), two have mean scores higher than 4.0, namely Sharing of risks between this organisation and the service provider (4.38) and Sharing rewards between this organisation and the 3PL service provider (4.05). Of the eight criteria in the Scope of 3PL services category (A3), three have mean scores higher than 4.0, namely Ability of the 3PL service provider to provide value-added services (4.52), Ability of the 3PL service provider to provide a customized service (4.34) and Geographical coverage of the 3PL service provider (4.21). Of the five criteria of the Cost and pricing structure of the 3PL service provider category (A4) three have mean scores higher than 4.0, namely Cost savings offered by the 3PL service provider (4.12), Low operation cost of the 3PL service provider (4.08) and Favourable price structure of 3PL service provider (4.01). Of the five criteria of the Service delivery of the 3PL service provider category (A5) four

have mean scores higher than 4.0; namely Adherence to the contract (4.27), On-time shipment and deliveries (4.18), Accuracy of delivery (4.16) and Low error rates (4.13). Of the nine criteria of the 3PL resources and technical capability category (A6) three have mean scores higher than 4.0, namely Information management and reporting (4.49), Information network security (4.38) and Information network accessibility (4.12). Of the six criteria of the Quality of the 3PL service provider category (A7) three have mean scores higher than 4.0, namely Commitment to continuous improvement from the 3PL service provider (4.55), Information management and compliance and risk management (4.12), and Quality of management by the 3PL service provider (4.07).

Table 1: Seven categories of 3PL selection criteria surveyed – in order of importance per category

	Selection criteria	Frequency	Mean	Standard deviation
A1	Credentials of service providers			
A1.6	Demonstration by the 3PL service provider	99	4.47	.705
A1.4	Accessibility of top management of 3PL service provider	99	4.17	.686
A1.3	Financial stability of the 3PL service provider	99	3.93	.689
A1.5	Reputation of the 3PL service provider	99	3.80	.756
A1.1	Turnover of the 3PL service provider	98	3.49	.828
A1.2	Volumes managed by the 3PL service provider	99	2.76	.938
	Average mean for category A1		3.77	
A2	Potential relationship with service provider			
A2.4	Sharing of risks between this organisation and the service provider	98	4.38	.780
A2.5	Sharing of rewards between this organisation and the 3PL service provider	98	4.05	.778
A2.3	Trust between this organisation and the 3PL service provider	99	3.95	.705
A2.2	Information sharing between this organisation and the 3PL service provider	99	3.88	.799
A2.1	Strategic relationship with 3PL service provider	99	3.79	.643
	Average mean for category A2		4.01	
A3	Scope of 3PL services			
A3.8	Ability of the 3PL service provider to provide value-added services	99	4.52	.629
A3.2	Ability of the 3PL service provider to provide customised service	99	4.34	.785
A3.3	Geographical coverage of the 3PL service provider	99	4.21	.594
A3.1	Range and level of 3PL service offerings	98	3.93	.911
A3.5	Ability of the 3PL service provider to solve problems	98	3.84	.882
A3.4	Flexibility in delivery of 3PL services	99	3.79	.860
A3.7	Ability of the 3PL service provider to provide post-sale customer service	99	2.79	1.072

	Selection criteria	Frequency	Mean	Standard deviation
A3.6	Ability of the 3PL service provider to provide pre-sale customer service	99	2.68	1.018
	Average mean for category A3		3.76	
A4	Cost and pricing structure of the 3PL service provider			
A4.2	Cost savings offered by the 3PL service provider	97	4.12	.462
A4.5	Low operation costs of the 3PL service provider	98	4.08	.821
A4.1	Favourable price structure of the 3PL service provider	98	4.01	.696
A4.3	Low distribution cost of the 3PL service provider	98	3.71	.642
A4.4	Low warehousing cost of the 3PL service provider	98	3.65	.909
	Average mean for category A4		3.91	
A5	Service delivery of the 3PL service provider			
A5.1	Adherence to the contract	99	4.27	.603
A5.4	On-time shipment and deliveries	99	4.18	.787
A5.3	Accuracy of delivery	99	4.16	.854
A5.5	Low error rates	99	4.13	.888
A5.2	Speed of delivery	99	3.96	.768
	Average mean for category A5		4.14	
A6	3PL resources and technical capability			
A6.9	Information management and reporting	99	4.49	.629
A6.8	Information network security	99	4.38	.634
A6.7	Information network accessibility	99	4.12	.674
A6.6	Availability of real-time information	99	3.89	.741
A6.2	Information technology tracking capability of the 3PL service provider	99	3.77	.683
A6.3	Service capacity of the 3PL service provider	99	3.35	.799
A6.5	Suitability of equipment of the 3PL service provider	99	3.18	.861
A6.4	Suitability of facilities of the 3PL service provider	99	3.17	.813
A6.1	Efficient layout of the 3PL facility	99	2.40	1.068
	Average mean for category A6		3.63	
A7	Quality of the 3PL service provider			
A7.6	Commitment to continuous improvement from the 3PL service provider	98	4.55	.675
A7.4	Regulation compliance, e.g. (B-BBEE) status, risk management (OSH Act) by the 3PL service provider	99	4.12	.812
A7.1	Quality of management by the 3PL service provider	99	4.07	.834
A7.5	Compliance to environmental requirements by the 3PL service provider	99	3.97	.851
A7.3	Evidence of a quality management system (ISO) being used by the 3PL service provider	97	3.93	.711
A7.2	Quality of assets owned by the 3PL service provider	99	3.53	.965
	Average mean for category A7		4.03	

Mean score ranking of the selection criteria

Of the 44 selection criteria, the top 25 based on the highest mean values, are listed in Table 2. In the top five are two criteria from the category 3PL resources and technical capability. However, the following three categories are best represented in the top 25: Service delivery of 3PL (all 5 criteria included); Scope of 3PL services (4 of the 8 criteria included); and Quality of 3PL service provider (4 of the 6 criteria included).

Table 2: 3PL Selection criteria ranked according to highest means

Code	Top 25 selection criteria	Mean
A7.6	Commitment to continuous improvement from the 3PL provider	4.55
A3.8	Ability of the 3PL service provider to provide valued added services	4.52
A6.9	Information management and reporting	4.49
A1.6	Demonstration of innovation by the 3PL service provider	4.47
A6.8	Information network security	4.38
A2.4	Sharing of risks between this organisation and the service provider	4.38
A3.2	Ability of the 3PL service provider to provide customized service	4.34
A5.1	Adherence to the contract	4.27
A3.3	Geographical coverage of the 3PL service provider	4.21
A5.4	On-time shipment and deliveries	4.18
A1.4	Accessibility of top management of the 3PL service provider	4.17
A5.3	Accuracy of delivery	4.16
A5.5	Low error rates	4.13
A4.2	Cost savings offered by the 3PL service provider	4.12
A6.7	Information network accessibility	4.12
A7.4	Regulation compliance e.g. B-BBEE status, risk management (OSH Act)	4.12
A4.5	Low operation costs of the 3PL service provider	4.08
A7.1	Quality of management by the 3PL service provider	4.07
A2.5	Sharing of rewards between this organisation and the 3PL service provider	4.05
A4.1	Favourable price structure of the 3PL service provider	4.01
A7.5	Compliance to environmental requirements by the 3PL provider	3.97
A5.2	Speed of delivery	3.96
A2.3	Trust between this organisation and the 3PL service provider	3.95
A1.3	Financial stability of the 3PL provider	3.93

A3.1	Range and level of 3PL service offerings	3.93
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The fact that these 25 3PL selection criteria are rated mostly between very important (4) and extremely important (5) aligns with the findings of Aquezzel (2014), Menon *et al.* (1998), Qureshi *et al.* (2007) and Bayazit and Kaprak (2014).

Ranking of the seven categories of 3PL service providers selection criteria

From the calculation of the average mean per category (Table 1) it seems that the seven categories should be ranked as follows:

1. Service delivery of 3PL service provider (A5) ($\bar{x} = 4.14$)
2. Quality of 3PL service provider (A7) ($\bar{x} = 4.03$)
3. Potential relationship with 3PL service provider (A2) ($\bar{x} = 4.01$)
4. Cost and pricing structure of 3PL service provider (A4) ($\bar{x} = 3.91$)
5. Credentials of the 3PL service provider (A1) ($\bar{x} = 3.77$)
6. Scope of services offered by 3PL service provider (A3) ($\bar{x} = 3.76$)
7. 3PL resources and technical capability (A6) ($\bar{x} = 3.63$)

However, when respondents were asked to rank the seven categories as mono-dimensional constructs on a seven-point scale (1=most important), the rank order changed somewhat. From the means of the 98 usable responses in Table 3, the category Cost and pricing structure of 3PL service provider moved from fourth to first position, ranked as the most important category, with a ranked mean of 1.99. The category of Service delivery of the 3PL service provider dropped from first position to a ranked second with a mean of 2.18. The category Potential relationship with the 3PL service provider ($\bar{x} = 2.24$) maintained its place in third position. Why these discrepancies occurred is not obvious and needs further investigation. The reason may relate to the number and description of the criteria in each category, detail that is lost when an entire category is ranked.

A comparison of these results with the ranking results from the studies conducted by IOMA (2009), Moberg and Speh (2004), and Spencer *et al.* (1994) could have been provided interesting findings, if only the descriptions of the criteria were exactly the same. Nevertheless, as in this study, it is evident that service delivery of a 3PL service provider is ranked highly by all these studies.

Need for a 3PL service providers' index in South Africa

The overwhelming majority of respondents (90%) agreed that a ranking index for 3PL service providers in South Africa would assist their business in selecting a 3PL service provider.

Table 3: Respondents' ranking of the seven categories of 3PL selection criteria

Ranking position	Categories of 3PL selection criteria	Mean
1	Cost and pricing structure of 3PL service provider (A4)	1.99
2	Service delivery of 3PL service provider (A5)	2.18
3	Potential relationship with 3PL service provider (A2)	2.24
4	Credentials of the 3PL service provider (A1)	2.41
5	Scope of services offered by 3PL service provider (A3)	2.67
6	Quality of 3PL service provider (A7)	2.83
7	3PL resources and technical capability (A6)	3.68

Selection criteria split by industrial sector

Depending on the type of 3PL services predominantly outsources in an industrial sector, the rating of selection criteria may vary across industrial sectors. Various industrial sectors were represented by the respondents of the study; technology (n=7), telecoms and communication (n=8), construction (n=16), diversified (n=20), manufacturing (n=22), wholesale and retail (n= 25), and mining (n=28). Owing to the small number of responses in some of the industrial sectors, only the results for the last three sectors are presented in Tables 4-6.

Evident from Tables 4-6 is that the 3PL selection criteria categories: Service delivery of the 3PL and Potential relationship with the 3PL were consistently rated as the most important and second most important categories across the three industries compared. The 3PL selection criteria categories: Scope of 3PL services and 3PL technical resources and technical capability consistently were placed in the bottom two positions of comparative importance. These results are only applicable to respondents who do outsource logistics activities.

Noteworthy is the difference in results for the industry-specific evaluation of the 3PL selection criteria categories as multi-dimensional construct (as per Tables 4-6) and as mono-dimensional constructs. The latter resulted in the category: Cost and pricing structure of the 3PL consistently being rated as the most important 3PL selection criteria across the three industries analysed with Service delivery of the 3PL consistently in second position.

Table 4: Evaluation of categories of 3PL selection criteria – Mining sector

Ranking position	3PL Selection Criteria Category - Ranked	Frequency	Mean	Std. Deviation
1	Service delivery of the 3PL service provider (A5)	27	3.9556	0.71969
2	Potential relationship with the 3PL service provider (A2)	27	3.8667	0.46077
3	Quality of the 3PL service provider (A7)	27	3.8160	0.71578
4	Credentials of the 3PL service provider (A1)	27	3.7926	0.48511
5	Cost and pricing structure of the 3PL service provider (A4)	27	3.7648	0.43805
6	Scope of 3PL services (A3)	27	3.5099	0.50180
7	3PL resources and technical capability (A6)	27	3.4815	0.55213

Table 5: Evaluation of categories of 3PL selection criteria – Manufacturing sector

Ranking position	3PL Selection Criteria Category - Ranked	Frequency	Mean	Std. Deviation
1	Service delivery of the 3PL service provider (A5)	20	4.2900	0.52506
2	Potential relationship with the 3PL service provider (A2)	20	3.9125	0.45360
3	Quality of the 3PL service provider (A7)	20	3.8167	0.59946
4	Cost and pricing structure of the 3PL service provider (A4)	20	3.8100	0.47005
5	Credentials of the 3PL service provider (A1)	20	3.7650	0.47824
6	3PL resources and technical capability (A6)	20	3.6333	0.46739
7	Scope of 3PL services (A3)	20	3.6304	0.48362

Table 6: Evaluation of categories of 3PL selection criteria – Wholesale and retail sector

Ranking position	3PL Selection Criteria Category- Ranked	Frequency	Mean	Std. Deviation
1	Service delivery of the 3PL service provider (A5)	25	4.1120	0.63530
2	Potential relationship with the 3PL service provider (A2)	25	4.0900	0.45185
3	Credentials of the 3PL service provider (A1)	25	3.9560	0.47791
4	Quality of the 3PL service provider (A7)	25	3.9400	0.65948
5	Cost and pricing structure of the 3PL service provider (A4)	25	3.9040	0.48000

6	Scope of 3PL services (A3)	25	3.6343	0.43400
7	3PL resources and technical capability (A6)	25	3.5733	0.42755

MANAGERIAL IMPLICATIONS

Managers responsible for the outsourcing of logistics activities in business organisations can use the ranked 3PL selection criteria provided in this study to facilitate the critical task of evaluating prospective service providers. Managers of 3PLs can use the results of this study for an improved understanding of the needs of the market. They can use the ranked selection criteria to benchmark their own organisations and to align itself with market needs where necessary. 3PLs can also use the results of this study to direct their marketing campaigns owing to insight gained on the needs of 3PL users.

CONCLUSIONS

From the 44 criteria for selecting 3PL service providers, the users of 3PL service providers rated their importance and it was possible to rank the top 25 according to means. From this list it is possible to compile a 3PL service provider Index for testing with a large sample across industrial sectors.

Service delivery of the 3PL consistently ranked as the most important category of 3PL selection criteria when individual criteria is considered. When categories of selection criteria are ranked based on a mono-dimensional scale, then the cost and pricing structure of the 3PL was ranked as the most important 3PL selection criteria. Results suggest that there is no significant difference in the ranking of 3PL selection criteria per industry sector.

LIMITATIONS AND FURTHER RESEARCH

Owing to the limited number of responses, it was only possible to compare the 3PL requirements of the three industrial sectors. With the identified 3PL selection criteria the study could be extended to obtain sufficient data from the 3PL users in the different industrial sectors for comparative purposes. This should also allow formal inferential testing for differences between industry sectors. In addition, future research should develop and test the 3PL service provider index. Categories of selection criteria need to be further refined for improved reliability scores.

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