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Linking Success Factors to Financial Performance

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Abstract: Problem statement: Based on a literature survey, an attempt has been made in this study to develop a framework for identifying the success factors. In addition, a list of key success factors is presented. The emphasis is on success factors dealing with breadth of services, internationalization of operations, industry focus, customer focus, 3PL experience, relationship with 3PLs, investment in quality assets, investment in information systems, availability of skilled professionals and supply chain integration. In developing the factors an effort has been made to align and relate them to financial performance. **Conclusion/Recommendations:** We found success factors "relationship with 3PLs and skilled logistics professionals" would substantially improves financial performance metric profit growth. Our findings also contribute to managerial practice by offering a benchmarking tool that can be used by managers in the 3PL service provider industry in India.

Key words: Third party logistics, success factors, profit growth, empirical study

INTRODUCTION

Logistics is 'a time-based activity concerned with the profitable movement of information and materials into/through the organization and out to the customer. It includes everything from the moment a product or service needs to be made, through to incoming raw materials management, production, finished goods storage, delivery to customer and after-sales service' (Day, 1998). Logistics excellence helps firms create competitive advantages, enhances corporate profitability and drives customer satisfaction (Zacharia and Mentzer, 2004). Anderson and Narus (1995) revealed that companies stress their logistics capabilities to differentiate themselves from others. Hum (2000) obtained findings of companies moving towards outsourcing their logistics activities so that they can concentrate their efforts on their core businesses.

3PL involves the use of external companies for the management of some or all of the firm's logistics functions that have traditionally been performed within an organization. These functions performed by the third-party can encompass the entire logistics process or selected activities within that process (Lieb and Bentz, 2004; 2005). 3PL providers have specific logistics core competencies and they can manage logistics processes more effectively and efficiently than their partners. Therefore, outsourcing logistics activities to specialized 3PL providers has become a rapidly expanding source of logistics cost savings, competitive advantage and customer service improvements. These benefits can also help reduce the need for logistics related capital investments in facilities, equipment, manpower and information technology (Wang *et al*., 2006).

Several success factors of logistics outsourcing have also been reported in the literature, such as breadth of services (Piplani *et al*., 2004), globalization (Yeung *et al*., 2006), 3PL relationship (Cho *et al*., 2008), investment in specific assets (Wang *et al*., 2006), IT investments (Jeong *et al*., 2005, Piplani *et al*., 2004), professional experts (Aktas and Ulengin, 2005), supply chain integration (wind, 2005), industry focus, customer focus and 3PL experience. The vast research has shown certain financial issue; namely, profitability (Momani *et al*., 2010; Zreika and Elkanj, 2011; Stank *et al*., 1999a). Thus, this research uses finance performance associated to success factors. The main objectives of this study are to identify Indian 3PL firms' success factors that significantly influence finance performance and determine priorities of success factors of Indian 3PL firms.

Literature review: Finance performance reflects an organization's profitability and return on investment as compared to its competition (Green and Inman, 2005). Delios and Paul (1999) found that the geographic scope was positively associated with firm profitability. A firm's experience contributes to the development of new knowledge and capabilities, and this development influences a firm's supply chain integration strategy and finance performance (Barkema *et al*., 1996).

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The firms with limited industry focus would obtain fewer profits than others (Aleson and Espitia, 2002). Impact of customer focus and internationalization operation on 3PL firms' profit growth has been ensured further by the study carried out. Sahay and Mohan (2003) have studied extensively the influence of relationship with respect to 3PLs firms and found that it has positive relation with sales growth and profit.

Effective use of success factor such as IT will improve the production, revenue and profit of the firms. IT investment is positively associated with higher revenue and quality (Devaraj and Kohli, 2000). Hu and Plant (2001) argues that IT investments are positively correlated with financial performance metric such as profit. A sound financial performance of the provider ensures continuity of service and regular upgrading of the equipments and services. (Andersson and Norrman, 2002). Gibson and Cook (2001) argues that critical year on growth depends upon successful availability of managerial human resources.

Supply chain integration significantly impacts a firm's financial performance (Sodhi and Son, 2009). Influence of sales growth and profit on 3PL service providers' operational performance through supply chain integration is highlighted in the study carried out by Sahay and Mohan (2003). We formulate the following hypotheses relating success factors and financial performance metrics. Based on the above discussion, we offer the following hypotheses (Fig. 1) that relate key success factors and financial performance measures:

H1a: The key success factor of breadth of services is positively related to profit growth
H1b: The key success factor of internationalization of operation is positively related to profit growth;
H1c: The key success factor of customer focus is positively related to profit growth
H1d: The key success factor of industry focus is positively related to profit growth
H1e: The key success factor of relationship with 3PLs is positively related to profit growth
H1f: The key success factor of 3PL experience is positively related to profit growth
H1g: The key success factor of investment in quality assets is positively related to profit growth
H1h: The key success factor of investment in information systems is positively related to profit growth
H1i: The key success factor of skilled logistics professionals is positively related to profit growth
H1j: The key success factor of supply chain integration is positively related to profit growth

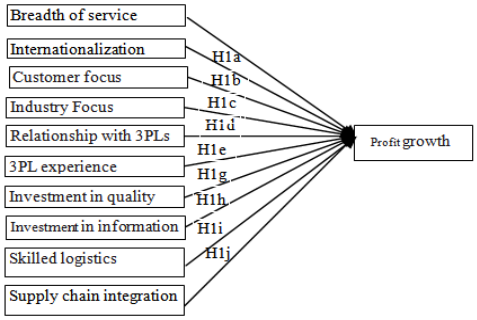

Fig. 1: Relationship between Success factors of 3PL service providers are positively related to profit growth

MATERIALS AND METHODS

Research methodology and analysis: Logistics management in India is too complex, with millions and millions of retailers catering to the requirements of more than one billion people that too in a developing infrastructure. The poor condition of roads translates directly to higher vehicle turnover, which in turn pushes up the operating costs and reduces efficiency. The reduced efficiency is passed on the logistics service providers, with transportation costs accounting for nearly 40 per cent of the total logistics cost. The National Highways are being upgraded but these highways account for a meager two per cent of the total road network in the country (Mitra, 2006).

Few challenges in this sector are to operate in poor infrastructure, complex tax laws, insufficient technological aids and limited use of IT, fragmented market dominated by individual truck owners, poor visibility in supply chain with advantages to freight consolidators and brokers few thousand vehicles out of a total of several millions have tracking system, Indian logistics firms offered limited services, Lack of skilled manpower and Lack of trust and awareness.

Despite these challenges, the country's logistics industry is set to grow towards success. Therefore, intention of this study is to identify few success factors of 3PL firms to overcome the challenges and to relate it with financial and operation performance metrics. Questionnaire survey was conducted to test the hypotheses. All items were rated on a five point Likert-type scale in which a score of 1 indicated "very low important," and a score of 5 indicated "very high important".

The mailing list was obtained from the logistics service providers directory 2008 published by CII Institute of Logistics (Logistics Service Providers Directory 2008, CII Institute of Logistics, Chennai, pp. 1-151). A sampling frame of 283 companies was

selected from the directory. A questionnaire was mailed to the CEO of each firm. The questions asked were also kept simple and the participants were offered access to the survey results, if they so wished. Of the 98 total questionnaires returned, three were eliminated because of missing data. The final analysis was performed with the remaining 95 filled out questionnaires resulting in an effective response rate of 33.6 percent.

Non-response bias and reliability: The mean differences between the four groups with respect to the annual revenue, cargo handled by the firms, age of the firms and number of employees were tested using an unpaired t-test. No significant differences were observed at the 0.05 level, indicating no systematic differences between the four groups. These analyses indicate that the study has no major non-response bias problems, the final sample of 95 firms can be observed as representative of the population. Cronbach alpha's for the success factors is 0.8292. While a coefficient of 0.5 or higher is considered sufficient when dealing with exploratory research, Cronbach α's of 0.7 and higher range form good to excellent (Barker 2008). Thus, the internal consistency of our scale is very good.

RESULTS

Profile of respondents: The profile of the 95 respondents is shown in Table 1. In order to classify the firms according to their similar operation, it has been classified into five clusters. The firms in cluster 1 have spent average of 15 years in business; with the average number of employee of 180 and the average annual revenue of these firms is 504 million INR. The service offered by the firms is customer clearance. The firms in cluster 2 have spent average of 14 years in business; with the average number of employee of 172. The average annual revenue of these firms is 507 million INR and the service offered by the firms is freight forwarding. The firms in cluster 3 have spent average of 13 years in business; with the average number of employee of 175. The average annual revenue of these firms is 483 million INR and the service offered by the firms is carrier selection. The firms in cluster 4 have spent average of 14 years in business; with the average number of employee of 175. The average annual revenue of these firms is 500 million INR and the service offered by the firms is freight payment. The firms in cluster 5 have spent average of 15 years in business; with the average number of employee of 185. The average annual revenue of these firms is 516 million INR and the service offered by the firms is order fulfillment.

Multiple regression analysis: This analysis examines relation between two (or) more intervally scaled predictor (independent-success factors) variables and one intervally scaled criterion (dependent-financial/operational performance metric) variable. SPSS 17 software has been used for the analysis. In this category we tried to find out the relationship between success factors and financial performance metrics. For these categories we repeated the analysis for five datasets namely, Customer clearance (64 firms), Freight forwarding (81 firms), Carrier selection (51 firms), Freight payment (60 firms), Order fulfillment (45 firms).

Table 1. Profile of the respondent

Cluster	Sample size	Average number of employees	Average age of firms	Average annual revenue in INR (in Million.)	Average firms Indian Geographic location			
					North	South	East	West
Customer clearance	64	180	15	504	40	49	40	44
Freight forwarding	81	172	14	507	58	65	53	57
Carrier selection	51	175	13	483	39	41	33	37
Freight payment	60	175	14	500	48	51	41	41
Order fulfillment	45	185	15	516	34	37	30	33

Table 2: Summary of results for cluster 1, 2 and 3 (Customer clearance, Freight forwarding and carrier selection)

	Cluster 1			Cluster 2			Cluster 3		
Independent variables	β value	t-value	Hypothesis	β value	t-value	Hypothesis	β value	t-value	Hypothesis
Breadth of services	-0.131	-0.798	H1a not supported	-0.088	-0.700	H1a not supported	-0.099	-0.628	H1a not supported
Internationalization of operation	0.359	2.018*	H1b supported	0.115	0.828	H1b not supported	0.242	1.243	H1b not supported
Customer focus	-0.009	-0.065	H1c not supported	-0.028	-0.241	H1c not supported	-0.107	-0.709	H1c not supported
Industry focus	-0.159	-1.017	H1d not supported	-0.401	-3.324*	H1d supported	-0.312	-1.874**	H1d supported
Relationship with 3PLs	0.404	1.915**	H1e supported	0.265	1.702**	H1e supported	0.406	1.814**	H1e supported
3PL experience	-0.260	-1.118	H1f not supported	0.017	0.098	H1f not supported	-0.123	-0.513	H1f not supported
Investment in quality asset	-0.152	-0.940	H1g not supported	-0.176	-1.366	H1g not supported	-0.196	-1.116	H1g not supported
Investment in Information Systems	0.262	1.839**	H1h supported	0.268	2.053*	H1h supported	0.306	1.755**	H1h supported
Skilled Logistics Professionals	0.402	2.344*	H1i supported	0.417	3.052*	H1i supported	0.343	1.857**	H1i supported
Supply Chain Integration	-0.202	-1.075	H1j not supported	-0.031	-0.212	H1j not supported	0.011	0.056	H1j not supported

*: Significant at 5% level, **: Significant at 10% level

Table 2a: Summary of results for cluster 4 and 5 (Freight payment and order fulfillment)

	Profit growth as criterion variable (H1)					
	Cluster 4			Cluster 5		
Independent variables	β value	t-value	Hypothesis	β value	t-value	Hypothesis
Breadth of services	-144.000	-0.982	H1a not supported	-0.354	-2.918*	H1a supported
Internationalization of operation	0.160	1.081	H1b not supported	-0.191	-1.126	H1b not supported
Customer focus	-0.030	-0.227	H1c not supported	0.031	0.235	H1c not supported
Industry focus	-0.625	-3.945*	H1d supported	-0.527	-3.856*	H1d supported
Relationship with 3PLs	0.465	2.564*	H1e supported	0.336	2.066*	H1e supported
3PL experience	0.095	0.490	H1f not supported	0.254	1.476	H1f not supported
Investment in quality asset	-0.219	-1.625	H1g not supported	-0.221	-1.448	H1g not supported
Investment in Information Systems	0.203	1.518	H1h not supported	0.078	0.457	H1h not supported
Skilled Logistics Professionals	0.459	3.136*	H1i supported	0.420	2.812*	H1i supported
Supply Chain Integration	-0.060	-0.384	H1j not supported	0.148	0.839	H1j not supported

*: Significant at 5% level, **: Significant at 10% level

DISCUSSION

In Table 2 and 2a, the regression analyses of key success factors on financial performance are first reported. From the results of the study, some important managerial implications are summarized below.

It is observed that a success factor such as "breadth of service" is negatively related to profit growth for order fulfillment service offered by the firms. This signifies that the Indian 3PL are not able to concentrate on profit growth due to expansion in service and due to poor infrastructure. In future they have to concentrate on these issues. The success factor such as "internationalization of operation" is positively related with profit growth for customer clearance service offered by the firms. This is similar to the study carried out in the context of US (Barwise, 1993). It is observed that a success factor such as "customer focus" e positively is related that profit growth for carrier selection service offered by the firms. This is similar to the study carried out in the context of

North America. The success factor such as "industry focus" is inversely proportional to profit growth for freight forwarding, carrier selection, freight payment and order fulfillment services offered by the firms. Industry focus may be responsible for profit growth, but they also involve additional expenses that may lead to rising inventory costs as demonstrated by the negative relationship with reducing inventory levels thereby resulting in growth in profits. The success factor such as "relationship with 3PLs" is positively related with profit growth for customer clearance, carrier selection, freight payment and order fulfillment services offered by the firms. This is similar to the study carried out in the context of US (Stank *et al*., 1999b). A surprising observation is the significant inverse relationship between the success factors such as "investment in quality assets and 3PL experience" and profit growth for the carrier selection service offered by the firms. This is due to huge requirement of initial and operating expenditure. It is observed that success factor such as "investment in information systems" is positively related with profit growth for freight forwarding and carrier selection service offered by the firms. This is similar to the study carried out in the context of US (Gibson and Cook, 2001). We found that success factor such as "skilled logistics professionals" is positively related with profit growth for customer clearance, freight forwarding, carrier selection, freight payment and order fulfilment services offered by the firms. This is similar to the study carried out in the context of US (Devaraj and Kohli 2000). One more fact to be noted is that success factor such as "supply chain integration" doesn't have any relation with financial performance metric such as "profit growth". This is due to poor visibility of supply chain integration. '

CONCLUSION

This study captures the influence of key success factors on financial and operational performance metrics of Indian 3PL service providers. Develops a conceptual model and proposes various hypothesis relating success factors with financial Hypothesis has been validated with 95 Indian 3PL services providers. We found success factor relation with 3PLs are considered to be an insignificant factor among Indian 3PL service providers except freight forwarding service offered by the 3PL firms . All the firms realize that substantial amount of contribution would be made by skilled logistics professionals towards profit growth except freight forwarding service offered by the 3PL firms. We find success factor focus on industries and breath of services are not taking so serious about Indian 3PL firms.

Probable direction for future research on 3PL could be to identify the impact of success factors with growth

strategies and the correlation with resource based view of the Indian 3PL firms. Comparison between 3PL service providers and customers (B2C) in terms of their expectations and fulfillments is considered to be the potential avenue. Furthermore, it is important to investigate and compare the relationship of success factors with performance metrics and growth strategies of 3PL industries in various geographic regions.

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