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 improve 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 issues; 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).
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 175. The average annual revenue of these firms is 516 million INR and the service offered by the firms is order fulfillment.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Sample size</th>
<th>Average number of employees</th>
<th>Average age of firms</th>
<th>Average annual revenue in INR (in Million.)</th>
<th>Average firms Indian Geographic location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer clearance</td>
<td>64</td>
<td>180</td>
<td>15</td>
<td>504</td>
<td>40 material</td>
</tr>
<tr>
<td>Freight forwarding</td>
<td>81</td>
<td>172</td>
<td>14</td>
<td>507</td>
<td>58 material</td>
</tr>
<tr>
<td>Carrier selection</td>
<td>51</td>
<td>175</td>
<td>13</td>
<td>483</td>
<td>39 material</td>
</tr>
<tr>
<td>Freight payment</td>
<td>60</td>
<td>175</td>
<td>14</td>
<td>500</td>
<td>48 material</td>
</tr>
<tr>
<td>Order fulfillment</td>
<td>45</td>
<td>185</td>
<td>15</td>
<td>516</td>
<td>34 material</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Cluster 1 β value</th>
<th>t-value</th>
<th>Hypothesis</th>
<th>Cluster 2 β value</th>
<th>t-value</th>
<th>Hypothesis</th>
<th>Cluster 3 β value</th>
<th>t-value</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationalization of operation</td>
<td>-0.359</td>
<td>2.018**</td>
<td>H1b supported</td>
<td>0.115</td>
<td>0.828</td>
<td>H1b supported</td>
<td>0.242</td>
<td>1.243</td>
<td>H1b supported</td>
</tr>
<tr>
<td>Customer focus</td>
<td>-0.009</td>
<td>-0.065</td>
<td>H1c not supported</td>
<td>-0.028</td>
<td>-0.241</td>
<td>H1c not supported</td>
<td>-0.107</td>
<td>-0.709</td>
<td>H1c not supported</td>
</tr>
<tr>
<td>Industry focus</td>
<td>-0.159</td>
<td>-1.017</td>
<td>H1d not supported</td>
<td>-0.401</td>
<td>-3.324*</td>
<td>H1d supported</td>
<td>-0.312</td>
<td>-1.874**</td>
<td>H1d supported</td>
</tr>
<tr>
<td>Relationship with 3PLs</td>
<td>0.404</td>
<td>1.915**</td>
<td>H1e supported</td>
<td>0.265</td>
<td>1.702**</td>
<td>H1e supported</td>
<td>0.406</td>
<td>1.814**</td>
<td>H1e supported</td>
</tr>
<tr>
<td>3PL experience</td>
<td>-0.260</td>
<td>-1.118</td>
<td>H1f not supported</td>
<td>0.017</td>
<td>0.098</td>
<td>H1f not supported</td>
<td>-0.123</td>
<td>-0.513</td>
<td>H1f not supported</td>
</tr>
<tr>
<td>Investment in quality asset</td>
<td>-0.152</td>
<td>-0.940</td>
<td>H1g not supported</td>
<td>-0.176</td>
<td>-1.366</td>
<td>H1g not supported</td>
<td>-0.196</td>
<td>-1.116</td>
<td>H1g not supported</td>
</tr>
<tr>
<td>Investment in Information Systems</td>
<td>0.262</td>
<td>1.839**</td>
<td>H1h supported</td>
<td>0.268</td>
<td>2.053*</td>
<td>H1h supported</td>
<td>0.306</td>
<td>1.755**</td>
<td>H1h supported</td>
</tr>
<tr>
<td>Skilled Logistics Professionals</td>
<td>0.402</td>
<td>2.344*</td>
<td>H1i supported</td>
<td>0.417</td>
<td>3.052*</td>
<td>H1i supported</td>
<td>0.343</td>
<td>1.857**</td>
<td>H1i supported</td>
</tr>
<tr>
<td>Supply Chain Integration</td>
<td>-0.202</td>
<td>-1.075</td>
<td>H1j not supported</td>
<td>-0.031</td>
<td>-0.212</td>
<td>H1j not supported</td>
<td>0.011</td>
<td>0.006</td>
<td>H1j not supported</td>
</tr>
</tbody>
</table>

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

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).
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” is positively related that profit growth for carrier selection service 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 breadth 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 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 fulfillment 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.

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

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

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

REFERENCES


