

THE INFLUENCE OF THE MANAGEMENT SUCCESS FACTORS OF LOGISTICS SERVICE PROVIDERS ON FIRMS' COMPETITIVENESS

Oláh J., Sadaf R., Máté D., Popp J.*

Abstract: Our research deals with a comprehensive study of the management success factors of logistics service providers using a new approach, and examines the life of logistics service companies. The data were collected from 51 logistics service providers in Hungary. In formulating the hypotheses, we considered management success factors and examined their impact on and relationship with the factors of competitiveness of logistics service companies (including breaking them down in terms of their performance, operations and capacity to change). To sum up and listing in order the success factors of the business, we have found that trust is the first, sector-specific IT development the second, the third is the choice of strategy and the fourth is the service portfolio and profitability-based diversification. The order and volume of development of these areas can have a significant impact on the development and financial results of the factors determining the competitiveness of logistics companies. The results of our research can effectively support logistics service providers in finding their business success factors, which will enable them to fully satisfy their customers' expectations in the supply chain.

Key words: logistics service providers, collaboration, relationship value, competitiveness, success factor

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Introduction

In recent years it has become increasingly topical to examine logistics as a field of science that significantly influences the value creation and competitiveness of enterprises, and more specifically to get to know and analyse the activity of enterprises providing logistics services. In order to achieve these aims, it necessary to identify the management success factors supporting the fundamental competitiveness of logistics enterprises, as it is an essential development step for the companies involved (Wu, 2012; Jazairy et al., 2017). The categorization of logistic services began in the early 1990s when complex logistics functions and services were developed within the framework of long-term partnerships within

***Judit Oláh**, PhD., Institute of Applied Informatics and Logistics, Faculty of Economics and Business, University of Debrecen, Hungary; **Rabeca Sadaf**, Ihrig Károly PhD Doctoral School, Faculty of Economics and Business, University of Debrecen, Hungary; **Domicián Máté**, PhD., Institute of Accounting and Finance, Faculty of Economics and Business, University of Debrecen, Hungary; **József Popp**, Prof., Institute of Sectoral Economics and Methodology, Faculty of Economics and Business, University of Debrecen, Hungary
✉ Corresponding author: popp.jozsef@econ.unideb.hu

traditional transport and warehousing activities. This phenomenon is called 3 PL (Third Party Logistics). These services are provided by the 3rd Party Logistics Provider (3 PLP). In international literature, the growing level of logistics services is represented as a pyramid (Trembeczky, 2007). In addition to the pyramid, the ever-deepening integration of logistics service providers in the supply chain is evident. Due to the integration and the increasing customer service expectations, the number of services provided by the logistics service providers is increasing and the service portfolio is widening. The development and change of logistics service providers was shown by (Meng et al., 2010).

Logistics service companies are integrated companies in the supply chain, service providers offering diverse and wide-ranging value-added activities, which have acquired significant roles in the competition in supply chains over recent years.

The shift in the competition of goods and services to competition in supply chains has revalued the role of logistics service providers in analyses of company activities and relationships. Economic impacts, such as globalization and natural risks, including the extraordinary effects of unexpected natural disasters, have further raised the importance of the role mentioned above and the generalization of the results obtained, and thanks to their integration, the conclusions reached during the analysis of logistic service providers have also been broadly extended to the relationships between companies in the supply network. A more advanced role for LSPs has been created by the connectivity and communication requirements of the leading supply chains. Logistics service providers strive to boost their capabilities and use their resources efficiently. As the global economy has expanded, logistics has become increasingly important, parallel to the expanding role of logistics service providers.

Companies generally outsource their logistics to external service providers in order to improve the efficiency of their core functions. How to manage their relationships with service providers is critical to the success of these outsourcing activities, due to the loosely coupled nature of outsourcing relationships. In order to achieve these objectives, it is necessary to identify the management success factors which support the fundamental abilities of logistics enterprises and this is also a necessary step for the development of companies in the target group.

In order to identify their management success factors it is certainly justified to carry out comprehensive research among logistics service providers. The role of these service providers has become increasingly important in the economy. For global logistics service companies, international supply chains pose challenges and opportunities at the same time. The search for proper enterprise size through acquisitions and strategies (such as the search for economies of scale on the part of logistics service providers, and the role of strategic choice) can support logistics service companies in identifying their management success factors which could assist them in meeting the expectations of their customers in the value chain.

This research contributes to the sparse literature that has examined the relationship between key success factors and performance among logistic service providers

in a Hungarian context. The identification of answers could support LSPs in Hungary in identifying their management success factors which could assist them in meeting the expectations of their customers in the value chain – supply chain – supply network.

Literature Review

The logistics services industry has exhibited tremendous growth for more than two decades (Maloni and Carter, 2006) and the work of LSPs has been increasingly recognised over the last few years, as has the significance of functioning supply relationships (Huemer, 2012). LSPs provide typical warehousing activities such as receipts, shipments, inspections, packing for specific clients, and then billing the client for these warehouse services. A more advanced role for LSPs has been created by the connectivity and communication requirements of leading supply chains. The literature shows that the logistics services industry is an increasingly important topic for researchers (Panayides, 2004; Sohail et al., 2004; Maloni and Carter, 2006; Yeung et al., 2006; Selviaridis and Spring, 2007; Trentin, 2011; Marchet et al., 2016; Mehmman and Teuteberg, 2016). The most frequent references to the topic since the 1990s are mostly American and British, but researchers from Northern European countries such as Sweden and Norway have also been publishing their scientific findings related to the sector since the turn of millennium (Murphy and Daley, 2001; Hertz and Alfredsson, 2003; Markides and Holweg, 2006; Lukassen and Wallenburg, 2010; Huemer, 2012). LSPs are required to continuously sustain a more and more competitive cost structure (i.e. efficiency) and develop capabilities to improve their services (i.e. innovation); hence the evaluation of these key success factors is considered a key issue (Marchet et al., 2016). Moreover, economic and social benefits and the effects of virtual enterprises for customers and production companies and service providers are essential for virtual enterprises, see (Kovács and Kot, 2017).

Key Success Factors and Performance

Many LSPs have taken initiatives to broaden the scope of their services in order to satisfy fully the increasing requirements of customers for one-stop services (Murphy and Daley, 2001). A major decision concerns the extent to which they should improve their service performance and expand their service capability (Lai and Cheng, 2003). Performance measurement is an important approach in the logistics service supply chain (LSSC), which can improve the competitiveness of the overall supply chain. The complicated measurement system includes various quantitative and qualitative indices, with undefined problems (Gong and Yan, 2015). Several key success factors have been proposed in the 3PL literature to judge performance. Examples include long-term relationships and building a history of favourable experiences (La Londe and Powers, 1993). After adopting a general service firm's perspective on studying LSPs, Berglund (2000) identified

four LSP value creation modes with associated value drivers, namely: operational efficiency, integration of customer operations, supply chain management and integration, and vertical or horizontal network development. Busse and Wallenburg (2014) noted that collaboration is an important value creation mode. Liu et al. (2010) and Brodbeck et al. (2010) developed and empirically examined 13 firm-specific capability constructs based on a survey of Chinese LSPs by drawing on work from economics and strategy on firm-level competitiveness, particularly the resource-based view. In this study, networking factors include IT, service networks and marketing; strategic factors include corporate culture, innovation, strategic management and human resource management; and operational factors include service quality, customer relationship management, operations management, inventory management, business process management and cost management. The business performance of an LSP and distribution centre (DC) is significantly affected by operational efficiency (Huo and Zhao, 2015; Ślusarczyk, 2017). The identification of the management success factors supporting the fundamental abilities of the competitiveness of Hungarian logistics enterprises (Figure 1) is an essential step in the development of the enterprises in the target group.

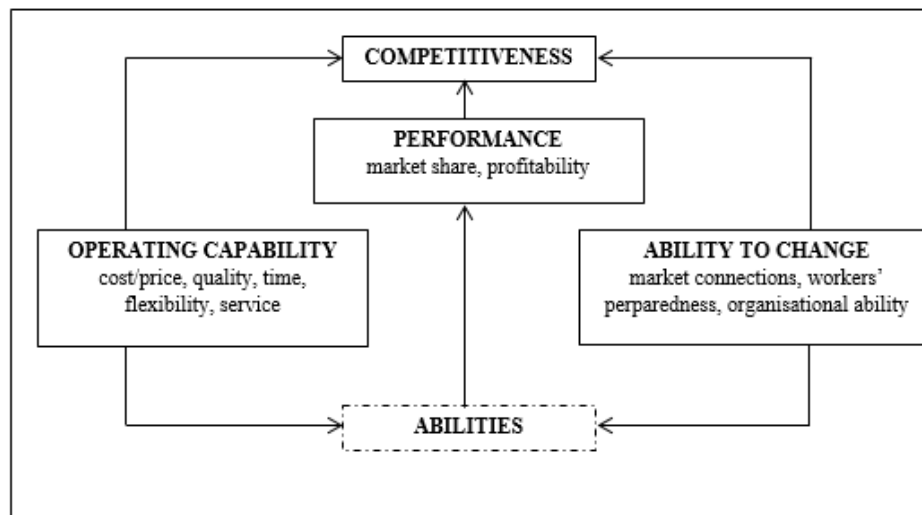


Figure 1. Enterprise Competitiveness Model (based on Chikán, 2013)

The competitiveness of enterprises is determined by their operating capability, their ability to change and their performance (Oláh et al., 2017). This correlation is illustrated by Figure 1. The ability to change and flexibility have a significant role in the competitiveness model.

Current Hungarian and international social, economic and political impacts, changes and trends were explored in order to lay the foundations of the research. In addition, this paper established the groups of success factors based on the observations made, and the conclusions drawn, from discussions with the managers

of various Hungarian LSP enterprises, as well as the results of meetings with professional academics (Figure 2). Furthermore, this research was established by using these bases and by looking for correlations between abilities and ‘success factors’, as well as by grouping the various factors, such as:

1. Trust – degree of success – flexibility (trust refers to the examination of the fundamental factor of relationships within a given enterprise and also between cooperating enterprises, looking for the role of the manager in establishing a trustful atmosphere).
2. Time – service portfolio – flexibility (time-based competition of products and services, supply chains, the composition and profitability of the service portfolio).
3. Searching for the proper enterprise scale – acquisitions – strategies (including the method of searching for economies of scale (market) in the LSP segment to be examined, and the role of choosing a strategy).
4. The correlation between the degree of integration of LSPs in the supply chain – the impact of (special) IT solutions and developments – and flexibility, as well as its impact on the financial results of the enterprise.

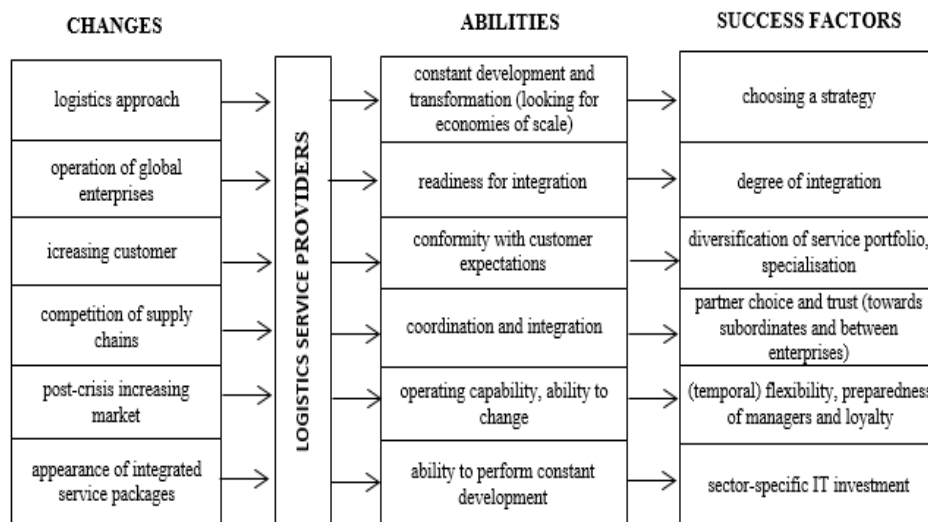


Figure 2. Forces Acting on LSPs and the Abilities needed to ensure their Competitiveness in the Recent Period (while considering the success factors which are related to performance and degree of success)

By grouping success factors based on revealed impacts, changes, trends and experiences, the research objectives were formulated, as the following:

C1: Investigate and analyze the role of trust and the impact of its level on the revenue, pre-tax results and flexibility of logistics service companies. Within this, look at the role of the chief executive in within-firm and between-firm relationships

(trust levels), and hence his/her leading role in the sales, pre-tax results and flexibility of logistics service companies.

C2: Investigate and analyze the service portfolio of logistics service providers, their profitability-based diversification and its impact on the revenue, pre-tax results and flexibility of logistics service providers.

C3: Investigate and analyze the impact of acquisitions made in the search for company size on the sales, pre-tax results and future strategy of logistics companies.

C4: Investigate and analyze the role and significance of sector-specific IT developments on the sales revenue of logistical providers, their pre-tax results, the impact on their flexibility and their integration.

In formulating the hypotheses, the key factors shaping success need to be taken into account, and their impact and their relationship need to be examined in terms of the competitiveness of logistics service companies (including breaking them down into the following elements: performance, operations and capacity to change). The following hypotheses (HP) have been formulated:

HP 1: *The trust level of an LSP within the enterprise influences the revenue and earnings before tax.*

HP 2: *The internal trust level established by an LSP influences the flexibility of the examined logistics enterprises.*

HP 3: *The trust level of the business environment created by the chief executive of a logistics enterprise influences the revenue and earnings before tax, as well as the flexibility of the examined enterprise.*

HP 4.1: *Pre-tax profitability of logistics service providers is determined by the service portfolio's profitability-based diversification.*

HP 4.2: *Revenue-based diversification of the service portfolio by logistics service providers has an impact on corporate flexibility.*

HP 5.1: *Growth through acquisitions (economies of scale) better supports the growth of logistical service providers' income and pre-tax profits than organic growth.*

HP 5.2: *A medium-term, growth-committed strategy is more conducive to the growth of pre-tax profitability of logistics service providers than other strategies.*

HP 6.1: *The revenue and earnings before tax of LSPs depend on the sector-specific IT developments implemented by the enterprise.*

HP 6.2: *The degree of integration of LSPs into the supply chain depends on the sector-specific IT developments performed by the enterprise.*

HP 6.3: *The sector-specific IT development level of LSPs has an impact on the flexibility of enterprises.*

Research Methodology

A list of around 300 Hungarian LSPs was compiled from information provided by the professional organisations contacted by us before starting the research, as well as official sources which can be accessed in the trade press (IFKA, 2013). From this list the target group was selected, including enterprises with revenue (net sales) of at least EUR 100 thousand, but not higher than EUR 100 million per year. This group consists of 284 LSP enterprises. Thirteen per cent of the interviewed LSPs were established in 1990, when several entrepreneurs decided to set up their own companies due to the political and economic restructuring. 36 of the 56 enterprises examined were founded as firms involved in international road transport activity. More than 50% of the examined LSPs were engaged in domestic road and international road transport of goods or road forwarding services directly after their establishment. Thirty-two per cent of the newly-established LSPs were primarily involved in warehousing activities. The following activities ranged between 10%-20%: railway transport and/or forwarding, air freight and/or forwarding, water freight and/or forwarding, transport and/or forwarding of containers, custom-house agent activities, transport and/or forwarding of oversized goods, logistics activities outsourced by clients inside or outside the factory yard, freight insurance and logistics consultancy. Seventy-five per cent of the enterprises involved in the research were primarily Hungarian-owned.

The geographical distribution (Budapest and non-Budapest) was drawn up to illustrate the basic and sample population of the research data, showing the regional location of the Hungarian logistics enterprises based on the available data, for the purpose of providing geographical representativeness. The regional locations, categorised into two NUTS 3 counties, properly show the 'identity' of distributions and verify representativeness. Also, representativeness is further confirmed by the test results of the basic and sample population of the research data obtained, as well as the similarity of the histograms illustrating distributions. The test results obtained led us to conclude that neither of the two distributions are normal ($p < 0.001$ in both cases) and that the two distributions are very similar indeed, based on the examined parameters. Furthermore, neither the sample-based, nor the population-based distribution can be regarded as normal (their parameters differ), but the graph shows that the pointedness of both distributions are similar, bending to the left and stretching to the right. Accordingly, the conclusion can be drawn that the curves of both the examined population and the sample are similar to each other (even though they deviate from the normal curve). F test statistics further verify similarity, since the variance of the two variables can be regarded as similar ($F = 2.213$; $p = 0.138$).

During the compilation of the questionnaire, we considered the need to extract the answers to the questions posed by the hypotheses. GfK Hungary Market Research Institute contributed significantly to the structure of the questionnaire, we created the professional content, and the possible response forms and types were greatly influenced by the data quality and type that can be managed and expected

by the evaluation software (SPSS). Questionnaires were completed using the Computer Assisted Web Interviewing (CAWI) method. The internet-based questionnaire technique provided an effective research background for this target group by allowing respondents to answer questions on delicate corporate issues (financial issues, role of suppliers, etc.) more honestly, as the interviewee's response was not affected by the presence of the interviewer. In addition, it was an advantage that more precise answers could be given, as the questions were read by the interviewees themselves, and they could check the accuracy of their responses. There was no time limit for answering the questionnaire and the respondents were able to look at the precise data and to think about the questions.

A 51-item questionnaire was put together for the target group to confirm or reject our research questions. The first 14 questions were related to the characteristics of the company. The following 30 questions included trust issues (questions 1-2 dealing with business confidence, 3-11 with trust within the industrial sector, 12-19 with trust within the company, 20-23 with membership(s) of organizational bodies, and 24-30 with strategy). The penultimate part dealt with the service portfolio (1-6), while the last 6 questions asked about the characteristics of the leader of the company.

The authors of this research pre-tested the questionnaire in ten companies representative of the different environments present in the sampled population. The main objective of this pre-test was to verify the appropriateness of the questionnaire. Hence, this analysis assessed the difficulties faced by the respondents in understanding the questions, in retrieving the required quantitative information and eventual ambiguities in the questions.

The net revenue and earnings before tax of all 51 responding LSPs for the period between 2004 and 2011 were used to examine the research questions. The total revenue of the respondents was HUF 127,657.51 million in 2011, a year for which stable statistical data were provided. This value is more than 50% of the total annual revenue of all logistics enterprises in 2012.

Based on the above, it can be stated that the sample primarily reflects the opinions of market participants with higher revenue. Our sample represents the opinions of big companies in the sector, because of the relatively low response rate and their high share in the revenue of the industry. At the same time, as shown above, the regional distribution of the sample corresponded to the distribution of the base population.

Results

The hypotheses were justified using the results of the empirical research. The results of research on the development of the logistics service providers, the appearance of their categories and development of their characteristics, as well as the substantiated hypotheses, have brought new scientific findings.

HP1: The level of corporate trust in logistics companies has an impact on corporate revenue and pre-tax profit. The hypothesis was justified using

the results of the empirical research. We have verified whether there were any significant differences in the level of trust in each of the categories related to profitability. To do this, we investigated the variances of each category. In describing internal trust, we used variables to judge the overall atmosphere of trust within the company and its aspects. Based on the tests and calculations, the hypothesis is partially correct and the thesis (T) can be formulated.

T1: Increased trust within logistics companies (related to the staff) creates a positive change in the company's pre-tax profit. As a recommendation, leadership tools (involvement, delegation, advertising an open door program, etc.) can be used, which allow the staff to increase trust levels from the chief executive right through the company.

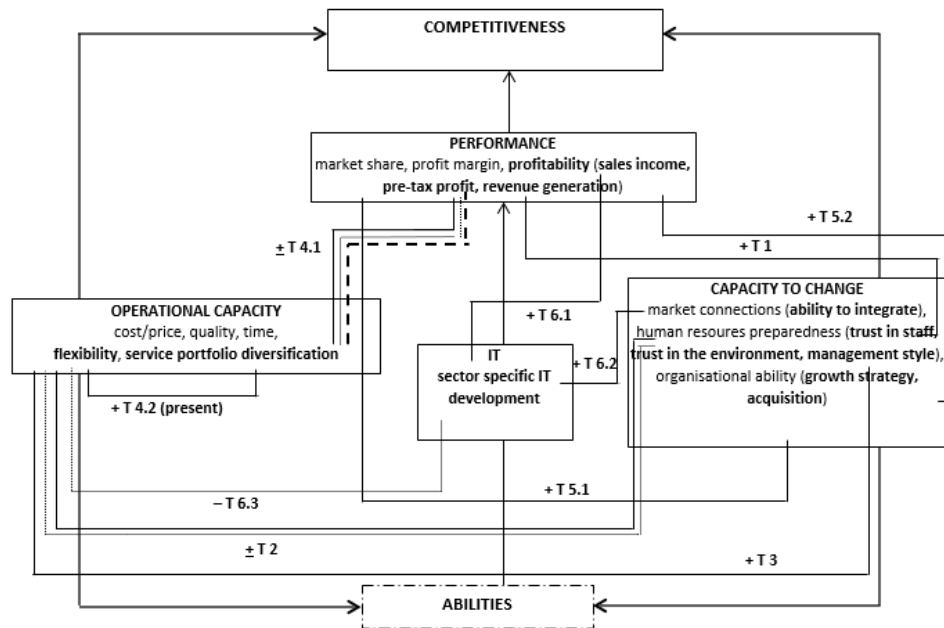


Figure 3. Effects of Management Success Factors and their Relationship to the Competitiveness of Logistics Companies

HP 2: The internal trust level created by logistics service companies has an impact on the flexibility of the logistics companies investigated. We first checked whether there was a relationship between the level of internal trust and the flexibility of companies, and if so, how close and of what nature it was. For this we examined the variance of internal trust in the very low and very high categories. We found that general internal trust has different variances in the individual flexibility categories. This meant that there was a significant relationship between the two variables. The results of further calculations showed that although there was a significant relationship between the overall internal trust built by the logistics companies and the flexibility of the organization, the relationship is non-linear,

but polynomial, and also second-degree. This meant that in the extreme flexibility categories (extremely flexible and extremely inflexible), the degree of general internal trust was significantly lower than in the case of moderate flexibility.

T2: In logistic companies an extreme flexibility value (very low and very high flexibility) is accompanied by a lower level of trust within the company, while in the case of companies with moderate flexibility, this overall internal trust is higher. As a recommendation, in relation to the search for the appropriate size of firm, by measuring and maintaining (or improving) the internal (related to staff) level of trust, leaders of logistics service providers can create more efficient, continuous development and growth by acting in accordance with the characteristic market size of service firms.

HP 3: The trust level of the business environment created by the chief executive of logistics companies has an impact on the revenue and pre-tax profits and flexibility of the logistics companies surveyed. We tested whether there was any relationship between the level of trust in the business environment and the company's results indicators and flexibility indicators, and if so, how strong and what kind it was. The trust level of the business environment created by the chief executive was measured in the questionnaire with two variables (leadership role, leadership style). Based on our calculations, there was no connection between the result indicators and the level of trust in the environment.

In the second part of the hypothesis we examined the relationship between flexibility and trust in the environment variables. None of the indexes show a significant correlation between managerial style and flexibility ($p = 0.496$). We found that the mean square (the distribution) of the indicators of leadership styles does not show any significant difference between the groups. As a conclusion from the results of the calculations, we can conclude that there is no significant relationship between the level of trust in the business environment created by the chief executive of the logistics companies and the profitability of the logistics companies surveyed, so the hypothesis cannot be justified. On the other hand, there was a relationship between the level of trust in the business environment created by the chief executive of logistics companies and the flexibility of the logistics companies under examination, and this was a positive, moderately strong relationship. This meant that the more significant the role of the leader in creating an environmentally friendly atmosphere, the greater the flexibility of the organization.

T3: Higher trust in the environment in logistics companies results in higher flexibility. As a recommendation, logistical companies may be able to use a "deep mutual knowledge of each other" while trying to partner with customers and subcontractors (while achieving higher levels of trust) as the factors of performance perceived by the customer can help to achieve higher flexibility on the part of the provider.

HP 4.1: Pre-tax profitability of logistics service providers is determined by the service portfolio's profitability-based diversification. In order to qualify

the service portfolio, it is not enough to take into account the number, but also the ranking of each service type. As this hypothesis combined the diversity of service portfolios with efficiency, we considered it important to categorize each service item according to its profitability level. We relied on expert estimates and data from leading professional organizations. We asked the opinion of seven players in the logistics industry about the profitability of each type of service, and based on their aggregated opinion we formed the relative profitability level of the service types. We used the relative profitability level to characterize the service portfolios of one company. Service portfolio diversification has resulted in the profitability-weighted cumulative value of the services provided by the company, which included the number of services provided and their profitability. The calculations for the past period indicated that there was some link between the service portfolio and the pre-tax results. There was no connection between the changes in the pre-tax results for 2004 and the pre-tax results for 2005 on the one hand, and the diversification of the service portfolio for 2004 on the other, and this was verified by variance analysis (F sig: 0.232). Conversely, there was a positive relationship between the changes in the pre-tax results for 2007 and the pre-tax results for 2008 on the one hand, and the diversification of the service portfolio for 2007 on the other, and this was verified by variance analysis (F sig: 0.023). There was a negative relationship between the pre-tax results for 2011 and the change in the pre-tax results for 2012 on the one hand, and the diversification of the service portfolio in the "present" section on the other. It can be seen from the results of the study that profitability deteriorated in organizations with greater diversities in the years under review, as there was a significant negative relationship between the two variables. Taking into account the development steps and aspirations of the logistics service providers, this was surprising for the practitioners too, so the results were verified several times. This unexpected result may have been due to the fact that the logistics service providers surveyed have "tried their hand at everything" in recent years, offering more services - for example, not choosing the path of specialization as an alternative - and this bad response to increased competition reduced profitability (although the business risk was presumably reduced).

With reference to the above findings, the empirical results of hypothesis 4.1 cannot be inferred as a conclusion from a thesis, but merely as a summary statement. Among logistics companies, there is no significant relationship from 2004 to 2005 in terms of the service portfolio, profitability-based diversification and the change in pre-tax profits of companies. There is a positive relationship: the greater the service portfolio's profitability-based diversification, the better the pre-tax profit from 2007 to 2008, and there is a negative relationship: the greater the service portfolio, the more diversified profitability base, the more pre-tax profit deteriorates from 2011 to 2012.

With reference to the above findings, **theoretical conclusions cannot be deduced from the empirical results of HP 4.1.** This may also mean that test results

for recent years very much "go against" the logistical companies' trends of the previous years, their generally accepted developmental aspirations, and the responses of providers to the complexity of customer expectations. It is therefore advisable to carry out a recalculation (reviewing the activities and their profitability) of the service portfolio every year for logistics service providers, while at the same time considering the possibility of specialization, since the above hypothesis encourages them to take account of strategies that operate in the opposite direction to future market trends and the complexity of customer expectations.

HP 4.2: Profitability-based diversification of the service portfolio by logistics service providers has an impact on corporate flexibility. The hypothesis verification methodology is based on the hypothesis of HP 4.1 - although it is based only on recent years due to the measurability of the flexibility factor in the present - and has been carried out by using the previously used flexibility factor. We found that the lower the profitability-based diversification of the service portfolio, the less flexible the company is; there is a significant positive relationship between the two variables.

T4.2: Among the logistics companies, there is a positive relationship between the profitability-based diversification of the service portfolio and the company's flexibility: the greater the diversification of the service portfolio, the more flexibility the company has. As a recommendation, logistics service providers should take into account, in addition to the profitability from individual activities, the profitability of their full, complex service in the design of their service portfolio, so as to search for the profitability optimization of their company, while maintaining its flexibility.

HP 5.1: Growth through acquisitions (economies of scale) better supports the growth of logistical service revenue and pre-tax profit than organic growth. To confirm this hypothesis we used the data of companies' net sales and pre-tax results. We first looked at whether there was a significant difference in net sales per employee - for growth-producing and non-producing companies - when the company made acquisitions and when they did not. Based on the values obtained, it was found that there is no significant difference between the results of pre-tax sales of logistic companies that show organic growth (45.17 - 53.1 million HUF / company) and companies that have grown through the acquisition (55.07 - 56, 23 million HUF / company). The same survey was made taking into account the net revenue of the average sales, and here the results showed significant differences. After the results were evaluated, the thesis 5.1 was formulated.

T5.1: Logistics companies following an acquisition growth pattern achieve significantly higher sales revenue than those that follow an organic growth pattern. As a conclusion we can say that if the development goal in logistics companies is to increase sales unconditionally, then this is best achieved by acquisitions. This, however, is not true of pre-tax profit. Thus, growth comes at a price; whether the company grows through acquisitions or organically,

it is necessary to finance growth (mostly from the profits generated). As a result of discussions with leading experts in logistics, we can state that the market expansion of logistical orders generated by production/manufacturing and trading companies will determine the future pace of the concentration of the logistics market, which will also affect the market equilibrium of organic and acquisition steps. As a recommendation for logistics service providers, if, with their organic growth they grow at a better rate than the market average, i.e. at 5-7%, then it is worth maintaining this strategy (with its lower risk). Conversely, if performance is below average and/or the management decides on a more intense growth strategy, and/or customer expectations mean the company may need to develop new markets or new services, then it is worth taking steps towards acquisitions for further development, after proper preparation. It is advisable that the preparation and execution of these acquisition attempts be carried out by a specialized external company.

HP 5.2: A medium-term, growth-driven strategy is more conducive to the growth of logistical providers' pre-tax profit than other strategies.

The strategic time lag variable derives from question B25. This is a category variable, from which the 'mid-term' and 'non-medium-term' cases have to be filtered. The growth strategy was identified from variable B27. There is also a need to filter the growth and non-growth strategies. The test variable uses the value of the pre-tax profits and filters the individuals using the results variable (increased or decreased). It can be seen from the statistics that there are significant differences between the results of companies that operate according to a growth strategy and a non-growth strategy. As a conclusion from the calculations made, we can say that, given the growth dynamics of companies, there is a significant link between the productivity of the surveyed companies and their commitment to growth (expressed in strategy).

T5.2: Logistics companies are more successful if they have a growth strategy (regardless of their time lag). However, this statement is true only of companies that could not increase (revenue) over the past period. That is, a time lag independent growth strategy developed by leaders of logistics companies leads to a more profitable company. As a recommendation to logistics companies' managers, it can be stated that developing and following a realistic growth strategy is advisable, as it is expected that - as a consequence of the above research findings and literature findings - the implementation of this strategy will lead to more efficient operation in the future.

HP 6.1: Revenue and pre-tax profits of logistics providers depend on sector-specific IT developments implemented by the company. For the first time, we created an indicator for each company, which shows whether or not sector-specific IT investment was made in the past period. Subsequently, we examined whether or not there was a significant difference between these financial indicators expressed in the hypothesis. Based on the significant results obtained from the studies, we have formulated the following thesis.

T6.1: Sales revenue and pre-tax profits of logistics service providers depend on sector-specific IT developments implemented by the company. Based on our research, it can be seen that the financial resources invested in IT investments, especially if they are sector-specific developments, are expected to provide a secure return and profitable operation for logistics service companies. As a recommendation we can state that sector-specific IT investments will also be important in the future; introducing and applying the best technologies can bring competitive advantage and better financial results for logistics service companies.

HP 6.2: The degree of integration of logistics service providers in the supply chain depends on the sector-specific IT developments implemented by the company. Before testing the hypothesis, we created a "degree of integration in the supply chain" variable, and then we looked at this value to see whether it differed for logistical service providers using industry-specific IT investments. If it was different, we could verify that there was a link between the two variables. The study showed a significant medium-strength relationship between the degree of integration in the supply chain and the sector specific IT investments in the dichotomous (sector-specific investment or not) variables. We deduced the direction of the relationship from the table. In companies where there was sector-specific IT investment, average or greater integration characterized 72.7% (54.5% + 18.2%) of the companies. By contrast, where there was no such IT investment, 62.1% (20.7% + 41.4%) of companies were characterized by low or no integration. Based on the above calculations, we conclude that where there was a specific IT investment in the sector, there was a higher degree of integration in the supply chain (Sig. 0.015).

T6.2: The degree of integration of logistics service providers in the supply chain depends on the sector-specific IT developments implemented by the company: in companies with a higher level of industry-specific IT development, the degree of integration in the supply chain is higher. We found that the services available and offered by sector-specific IT investments appear as "cross-border" services of the logistics service company and provide an adequate process of efficiency support for supply chain members. The common use of IT means the process integration of the logistics service provider can be better achieved; especially if the level of integration capacity of the service provider is high (e.g. it is a member of several professional organizations and clusters).

HP 6.3: The sector-specific IT development of logistics providers has an impact on the flexibility of companies. During the research, we found that there is no significant difference in any of the flexibility categories in terms of whether or not there was sector-specific IT development. The results of the tests also showed that sector specific IT investment had no impact on the flexibility of the logistics companies under investigation. Moreover, further studies showed that no IT investment has any impact on flexibility. Thus, we could not formulate a thesis from hypothesis 6.3, although a summary thesis of the hypothesis-thesis group 6 can be formulated:

T6: The revenue, pre-tax profits and the degree of integration in the supply chain depend on sector-specific IT, but these developments have no impact on the flexibility of companies. As a conclusion, we can say that industry-specific IT investments have, primarily, a positive impact on financial performance and integration, but not the flexibility of companies. This may also indicate that sector-specific IT investments improve process efficiency and service standards, but do not improve the timely reactions expected by the customer and offered by the service provider, i.e. flexibility. This is primarily due to the size of the company, as it is assumed that companies which have made sector-specific IT investments are of a larger size than those who have not. As a recommendation, it is suggested that logistics service providers should not look to industry-specific or IT investment to improve their flexibility but rather from their employees' attitudes and the level of trust in the business environment created by the chief executive (T 3).

The question arises as to what factors (may) affect flexibility: the level of business environment confidence created by the chief executive (verifying HP3-T3), a high level of employee loyalty, optimum firm size, increased competition, or the quality of the relationships typical of the industry. These considerations require further examination of other factors, which may be part of further continuing scientific work, taking into consideration, and based on, the doctoral dissertation.

Discussion and Conclusion

The empirical research was conducted among the LSP undertakings and enterprises registered and operating in Hungary. Today, the interviewed logistics enterprises can be assumed to have (or be striving to have) a significant mediatory role in the international logistics process and that they provide vertically integrated logistics services to their partners, given their scale and the wide spectrum of their services. Summarizing and prioritizing the success factors of business management: the first is trust, the second is sector-specific IT development, the third is strategy selection and the fourth is service portfolio and profitability-based diversification. The priority, the order of development and the magnitude of resources in these areas can have a significant impact on the development of factors determining the competitiveness of logistics firms (e.g. flexibility).

The results of the methods used in the underlying investigations following the hypotheses show clear and concise conclusions in this scientific publication. The results of the research carried out by the companies in the examined service sector are instructive and some of the results can be extended to the members of the supply chain, thanks to the fact that the number of enterprises in the supply chain is typical of the size of the companies included in the sample, and is general for both the SME sector and also for logistics service providers. Hungary is already witnessing competition between international logistics service providers.

The research is limited to respondents from Hungary, which makes it difficult to generalise findings to other countries. Replication of this study in other countries - preferably in a country outside Europe - would improve the generalisability

of the results. Another limitation of this research is the low response rate among LSPs. As regards the more distant future, this research, the previous research findings and the trends to be drawn lead to the conclusion that the future of LSPs potentially lies not only in ‘lifting the borders between LSPs and those using these services’, but even transforming LSPs into ‘organisations sans frontiers’, to form a so-called LSP supply chain. The future of LSPs will be determined by the interaction of the service provider and those using these services. LSPs in Hungary should not expect to develop their flexibility from sector-specific or any kind of IT investment, but rather from the approach of their colleagues and the level of trust of the business environment established by the chief executive (Oláh et al., 2017b; Oláh et al., 2017c). To sum up, new sets of skills required for 3PL providers are emerging, above all the capability to propose innovative solutions and offer more complex and customer tailored services (Colin et al. 2011).

The latter effectively support LSPs in finding their management success factors, which enable them to fully satisfy the demands of their customers in the supply chain. The further development of the research methodology applied is a new direction of research, which enables comparison analysis of LSPs all around the world to be made, thereby exploring new findings through the examination of the target group in order to gain a clearer understanding of this field of science. New findings can be achieved from the existing dataset by further developing the research methodology in order to make comparison analysis of LSPs in neighbouring countries. In this way, new findings may lead to a more detailed understanding of LSPs.

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WPLYW CZYNNIKÓW SUKCESU ZARZĄDZANIA DOSTAWCÓW USŁUG LOGISTYCZNYCH NA KONKURENCYJNOŚĆ FIRM

Streszczenie: Badania dotyczą kompleksowej analizy czynników sukcesu zarządzania dostawców usług logistycznych przy użyciu nowego podejścia i analizują funkcjonowanie firm świadczących usługi logistyczne. Dane zostały zebrane od 51 dostawców usług logistycznych na Węgrzech. Przy formułowaniu hipotez wzięliśmy pod uwagę czynniki sukcesu zarządzania i zbadaliśmy ich wpływ na czynniki konkurencyjności przedsiębiorstw usług logistycznych oraz zależności między nimi (w tym ich rozkład pod względem wydajności, działania i zdolności do zmiany). Podsumowując, wymieniając w kolejności czynniki sukcesu biznesu, stwierdzono, że zaufanie jest czynnikiem najważniejszym, na kolejnych miejscach znalazły się: sektorowy rozwój IT, wybór strategii i portfel usług oraz dywersyfikacja oparta na rentowności. Kolejność i wielkość rozwoju tych obszarów może mieć znaczący wpływ na rozwój i wyniki finansowe czynników determinujących konkurencyjność firm logistycznych. Wyniki naszych badań mogą skutecznie wspierać dostawców usług logistycznych w znajdowaniu czynników sukcesu ich działalności, co pozwoli im w pełni zaspokoić oczekiwania klientów w łańcuchu dostaw.

Słowa kluczowe: dostawcy usług logistycznych, współpraca, wartość relacji, konkurencyjność, czynnik sukcesu

物流服务商管理成功因素对企业竞争力的影响

摘要：我们的研究采用一种新方法对物流服务供应商的管理成功因素进行全面研究，并考察了物流服务公司的生活。数据来自匈牙利51个物流服务提供商。在制定假设时，我们考虑了管理成功因素，并考察了它们对物流公司竞争力影响因素及其影响（包括在绩效，运营和变革能力方面的影响）。为了总结和列出业务的成功因素，我们发现信任是第一个，特定部门的IT发展第二，第三个是战略的选择，第四个是服务组合和基于盈利的多样化。这些领域的发展顺序和数量可能会对决定物流公司竞争力的因素的发展和财务结果产生重大影响。我们的研究结果可以有效地支持物流服务供应商找到他们的业务成功因素，这将使他们能够充分满足客户在供应链中的期望。

关键词：物流服务商合作关系价值竞争力成功因素