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# Logistics Outsourcing in Large Manufacturing Companies: The Case of Slovenia and Lessons from Other Countries

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## Abstract

Logistics outsourcing is a mode of operation for companies in global supply chains that have been increasingly devoting more attention to their core activities. This study examines the state-of-the-art in logistics outsourcing in the Slovenian manufacturing industry. Additionally, the authors benchmark the findings against a similar study from 2013. Finally, this study provides a discussion of logistics-outsourcing specifics in some countries with the use of secondary data. We identify transportation as a top-ranked logistics activity, and a general propensity for higher-level logistics outsourcing (e.g. 4 PL). The authors contribute to the supply-chain management society by identifying the drivers of, barriers to, and activities in logistics outsourcing.

*Keywords:* Outsourcing, Logistics, LSPs, Manufacturing, Slovenia, Survey

*JEL classification:* M15

## Introduction

As a result of ever-increasing demand for global supply chains (SCs) to deliver highly-efficient and cost-reductive services or products, SC actors have aimed at focusing on core activities whilst contracting out (“outsourcing”) the non-core activities such as logistics activities (Hartmann & De Grahl, 2011). Logistics outsourcing refers to the use of a third party (logistics-services provider or outsourcer) for carrying out logistics activities such as transportation, warehousing, customs clearance processes, inventory management, customer service, and reverse logistics, by the service user such as manufacturing company or an e-commerce business (outsourcee) (Ho et al., 2012). By outsourcing non-core activities, SC actors see an opportunity to redesign and improve the operations in global SCs to achieve a sustainable competitive advantage (Wang & Regan, 2003). As a research domain, outsourcing received a considerable amount of attention in the past. The past research

mainly focused on its conceptualization, benefits of and barriers to contracting out various business activities to third parties (see e.g. Belcourt, 2006). Furthermore, the past research revealed the activities that are commonly contracted out and the characteristics of different arrangements between the outsourcer and the outsourcing providers (e.g. logistics service providers or LSPs).

However, outsourcing gradually evolved, especially in the domain of logistics. We note three major shifts that partly account for the evolution of outsourcing and have, consequently, established the need for its re-examination. First, logistics outsourcing has steered away from transaction-based relationships (McKinnon, 1999), and has become a long-term “vested relationship” among two, often equally powerful, SC actors (Vitasek & Ledyard, 2013). Second, with the shorter product life cycles and the need to align business processes and business models of both SC actors (Trkman et al., 2015), we face an increase of joint activities such as R&D and innovation in strengthened relationships

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with third parties. Finally, logistics outsourcing evolved as a result of contemporary issues such as mergers and acquisitions among LSPs, the development of SC networks, occasional aims towards disintermediation, and the efforts towards more environmentally friendly SC operations (Jakšič & Budler, 2020).

Drawing on past research and contemporary issues, the study at hand addresses the following research questions:

1. Which logistics activities are nowadays commonly outsourced among the large manufacturing companies?
2. Have the outsourcing arrangements between the manufacturing companies and LSPs faced any changes in the past decade?
3. What are the similarities and differences in logistics outsourcing between countries?

We address these questions with the analyses of primary and secondary data. To examine the first two research questions, we carried out a survey-based analysis of large manufacturing companies in Slovenia in 2019. The survey represents a follow-up to our first survey we conducted in 2013, which now allows us to observe the developments in logistics outsourcing. To answer the third research question, we carefully analyzed, structured, and presented the unobtrusive available data for discussion of the results and logistics outsourcing specifics in various countries. By addressing the research questions above, this paper provides several contributions for managers and researchers. Managers will better understand the mode of operation in logistics outsourcing, contemporary trends and challenges, and will be able to evaluate their logistics outsourcing with specifics from different countries. Researchers will be able to track changes from 2013 to 2019, understand current modes of operation in logistics outsourcing, and identify new frontiers in the arrangements between the outsourcers and LSPs and logistics activities.

The structure of the paper is as follows. We commence with a concise and structured state-of-the-art literature review on outsourcing, logistics activities and LSPs, as well as various sub-topics within our research domain in Section 1. Further, we explain how our research is carried out and the methodology we use in Section 2. In Section 3, we present the results on the current state and trends of outsourcing of logistics activities in large Slovenian manufacturing companies. We discuss key findings in Section 4. Finally, we state the concluding remarks with suggestions for future research.

## 1 Theoretical background

Contracting out non-core activities evolved along with an expansive development of the SC management. As a mode of operation for global SCs, it is particularly lucrative due to, for instance, expected operational cost-effectiveness, improved quality, and increased flexibility (Trkman et al., 2015). However, to reap the expected benefits of outsourcing, companies struggle to find a reliable partner (Aktas & Ulengin, 2005). The rationale for long-lasting outsourcing arrangements lies in the greater commitment of both parties, larger 'investments' in joint operations, and the increased frequency and complexity of collaboration (Bhatnagar et al., 1999).

The current study is specifically interested in outsourcing of logistics activities and the LSP utilization from the outsourcees. LSPs are 'third parties' that carry out logistics activities previously organized in-house (Hsiao et al., 2011). Third-party logistics providers (3 PLs) are commonly seen as providers of transportation or warehousing services, whereas logistics outsourcing also covers customs brokers, freight forwards, and supply-chain management among others. To steer away from narrow sense definitions and to encompass the possibility of conducting various logistics activities, the authors of this paper opt for LSP as a broader (generic) term for the outsourcer. LSPs can provide various logistics–management activities, including transportation, warehousing, sales logistics, and value-added activities such as packing, labelling and customer support (Berglund, Van Laarhoven, Sharman, & Wandel, 1999). Ultimately, the outsourcee such as a manufacturing company decides whether to outsource one or more logistics activities.

A review of the literature on logistics outsourcing promptly reveals that the selection of logistics activities is quite arbitrary. Thus, at this point, we refer to the 24th Annual Third-Party Logistics Study that lists a wide variety of logistics activities (Langley, 2020). The study reviews the following logistics activities (with the share of companies outsourcing a particular activity denoted): transportation (73%), warehousing (73%), customs brokerage (65%), freight forwarding (52%), freight bill auditing and payment (35%), cross-docking (35%), reverse logistics (33%), product packing and labeling (25%), order management and fulfilment (21%), transportation planning (19%), inventory management (17%), information technology and system services (15%), SC consulting services (11%), customer service (11%) and fleet management (9%). This list forms the basis for the selection of the most

commonly outsourced logistics activities we included in our study. We provide more details on different views on the selection of logistics activities in the relevant literature in our discussion.

Using transaction-cost-based reasoning, we can identify drivers and barriers of outsourcing logistics. Service users outsource logistics activities with the firm belief that it will facilitate the execution of logistics and to focus on core activities. In addition, service users tend to outsource the logistics under the conditions of volatile demand and difficulties to comply with local regulations. On the other hand, technological uncertainties and ambiguity in supply prevent building stronger relationships between LSPs and outsourcees (Yang & Zhao, 2016). Stronger relationships are of key importance for enhanced financial performance and overall satisfaction of the outsourcees. By strengthening the relationships between LSPs and outsourcees, information exchange is facilitated, delivery of customer value becomes a seamless and coordinated process, and the utilization rate of resources is improved. Global SCs thus utilize outsourcing to effectively respond to customer demands and to fulfill their needs with minimal costs and without excessive inventory. However, Simchi-Levi, Kaminsky, and Simchi-Levi (2009) advise companies to conduct a cost-benefit analysis to avoid 'hidden issues and costs' associated with outsourcing. Needless to say, some companies in their study reported higher costs than expected. On the other hand, companies that are willing to 'sacrifice' higher costs on the account of a superior service provided by the LSPs, report increased customer centricity and after-sales support. LSPs are specialized for logistics activities and are able to perform the activities at lower costs and with better quality of service.

Service users have been consistently claiming that logistics outsourcing allows for devoting more attention to core activities (Wilding & Juriado, 2004). Outsourcing is believed to be a preferred alternative for companies when entering new markets without having a well-developed logistics infrastructure (Razzaque & Sheng, 1997). In addition, it is particularly convenient for manufacturing organizations that experience season-based fluctuations in demand, fast growth, and plan large investments in production capabilities (McCarthy & Anagnostou, 2004). In manufacturing specifically, companies are aware of the importance logistics activities have for integration of the global SC and in facilitating a seamless flow of goods from the manufacturing company to end-users (Arroyo et al., 2006).

## 2 Research design

The presented research is a part of a broader research study on logistics outsourcing in Slovenian manufacturing companies. The first study was conducted in 2013, when we surveyed a large variety of manufacturing companies, from small and medium-sized to large enterprises. The 2019 survey is based on an extensive questionnaire that has been specifically designed to replicate a range of questions concerning different aspects of logistics outsourcing that were captured in the original survey, which allowed us to capture and analyze the trends over a time span of six years. We extended the survey by incorporating the environmental sustainability aspect.

Based on the insights about logistics outsourcing gained from the original survey, we narrowed the sample down to large manufacturing companies in this survey. Piczyk et al. (2015) show that it is the large companies that extensively use the outsourcing partners to perform a diverse list of logistics activities. In addition to the higher adoption rate, Eltayeb and Zailani (2009) and Hörisch et al. (2015) recognize that large businesses are also leaders in adoption of new practices in logistics outsourcing and can be considered as trendsetters.

The 2019 survey data were obtained through an online questionnaire, distributed to large Slovenian manufacturing companies. To be classified as a large company, the company needs to fulfill the following conditions: primarily employing at least 250 employees, secondarily (optional) a yearly revenue of 50 million euros or more, and/or a balance sheet total exceeding 43 million euros. In 2019, a total of 132 Slovenian companies fulfilled the above conditions and were contacted to complete the questionnaire. A total of 50 companies responded; of those, 38 responses were classified as full responses, suitable for further analysis. Therefore, the total response rate was 38%, where 29% of respondents provided high-quality responses. The questionnaire was directed towards middle management positions in logistics and most of the respondents who filled in the questionnaire fit into this group, while the rest come from the SC or production planning departments. We need to point out that the survey was anonymous, which imposes some limitations on the analysis as the survey data cannot be directly linked to broader company data.

The questionnaire included a set of multiple-choice questions with the addition of open type questions at points where additional input (e.g. opinions and experience) of respondents was expected. Importance was measured with a five-point

Likert-type scale (1 = not at all important, 2 = not important, 3 = neutral, 4 = important, 5 = very important). Apart from the basic descriptive statistics, we aimed to check whether statistically significant differences in companies' responses relative to the 2013 survey can be observed. We were also interested if the perception about the importance of logistics outsourcing varies across groups of companies that differ in the extent of outsourcing used. In addition to the statistical analysis based on the survey data, we undertook an extensive literature review to explore the logistics outsourcing practices in other countries. This allowed for discussion of logistics outsourcing practice specifics in some of the countries worldwide.

Prior to presenting the results of the current study, we hereby provide information about the survey conducted in 2013 and a comparison of the two surveys with descriptive statistics. In the recent survey from 2019, we followed the research design of the survey conducted in 2013, allowing us to perform the longitudinal study. Total population of large manufacturing firms in 2013 consisted of 215 companies, compared to 132 in 2019. While there is a general decline in the number of large manufacturing firms in the last decade, the difference can also be attributed to changes in terms of conditions that companies need to fulfill to be classified into this segment. We were able to obtain 48 quality responses in 2013, which means that the number of responses was higher; however, the response rate of 22% is below the response rate in the recent survey.

In [Table 1](#), we present sectoral statistics for the subsectors within the manufacturing sector. To keep the list more concise, we opted to exclude smaller

subsectors from which we have not received any responses. In both surveys, companies from all major manufacturing subsectors are represented in the sample. While the survey from 2013 demonstrates the results from companies mainly from the subsector of food manufacturing, the largest proportion of companies in the recent survey comes from the manufacturing of fabricated metal products subsector.

### 3 Logistics outsourcing in large Slovenian manufacturing companies

#### 3.1 Extent and types of outsourced logistics activities

We commence our study by investigating which logistics activities are outsourced and to what extent. The featured list of logistics activities has been composed based on similar studies conducted in other countries, which also enabled us to perform the comparison of Slovenian logistics outsourcing practices with the developments abroad (presented in [Section 4](#)).

Transportation is the logistics activity that is most commonly outsourced. Transportation encompasses all modes, including but not limited to rail, maritime, road, multi-modal, domestic, international, inbound, outbound, etc. as well as functions that are linked to transportation (e.g. consolidation of cargo, carrier selection, shipment tracking). While in 2013, 72% of companies reported that they have outsourced transportation activities, the 2019 survey shows that they all use LSPs. We split the warehousing processes into managing regular and additional (e.g. when in-house capabilities are full)

*Table 1. Sectoral statistics for large Slovenian manufacturing companies.*

Manufacturing subsectors	2013		2019	
	Population (%)	Sample (%)	Population (%)	Sample (%)
Manufacture of food products	8.4	18.8	12.0	2.8
Manufacture of beverages	1.9	6.3	1.5	8.3
Manufacture of textiles	4.7	4.2	0.8	2.8
Manufacture of wood and products of wood	5.1	6.3	3.8	5.6
Manufacture of paper and paper products	3.3	6.3	6.0	5.6
Manufacture of chemicals and chemical prod.	6.5	4.2	7.5	8.3
Manufacture of pharmaceutical products	1.4	2.1	2.3	2.8
Manufacture of rubber and plastic products	8.4	6.3	8.3	8.3
Manufacture of basic metals	4.2	4.2	7.5	8.3
Manufacture of fabricated metal products	9.8	12.5	8.3	27.8
Manufacture of computer, electr. and opt. prod.	3.5	0	4.5	2.8
Manufacture of electrical equipment	10.2	12.5	12.0	8.3
Manufacture of machinery and equipment	7.0	10.4	4.5	0
Manufacture of motor vehicles	6.5	4.2	9.0	2.8
Other manufacturing	4.0	0	2.3	2.8
Repair and installation of machinery and equipment	1.4	2.1	1.5	2.8

warehousing capacities of a company. The outsourcing of additional warehousing is used by a large share of companies (47% in 2019). The regular warehousing is still majorly done in-house (11% of outsourcees contracted it out in 2019). We observed a notable share of reverse logistics activities being outsourced, mainly related to the return of goods due to complaints and warranty issues (21% in 2019 and 21% in 2013), and in outsourcing of IT services related to development and implementation of logistics information systems (29% in 2019 and 15% in 2013). The remaining two logistics activities, packing/repackaging/labeling and management of logistical information systems (operational ordering system, inventory control, etc.), are not commonly outsourced (Fig. 1).

We observed some differences in the extent of outsourcing of logistics activities from 2013, whereas the prevalent trend remains the interest to outsource transportation. Prior to our two surveys, Pavlin (2004) had reported on the study by The Chamber of Commerce and Industry of Slovenia in 2004, and Lubej (2012) had analyzed logistics outsourcing in Slovenian companies. While the surveyed population of companies does not match across different studies, the general increase in outsourcing of transportation is evident with 55% in 2004, 67% in 2012, 72% in 2013, continuing to the current date when nearly all companies rely on LSPs. A more detailed comparison of the extent of outsourcing of different logistics activities shows that transport and warehousing activities experienced the highest growths of outsourcing throughout the last 15 years. Outsourcing of packaging/repackaging and reverse logistics remained at similar levels, while activities related to the logistics

information systems were not captured in the early studies.

Less extensive, yet an increasing trend is also seen in outsourcing of other logistics activities. Our survey confirms that a great share of companies (29%) is using an outsourcer for the implementation of their logistics information systems (Fig. 1, 2019). However, we also observe that a large majority of the surveyed companies is still keeping the operational management of these systems in-house, maintaining a high degree of control over their inventories and order fulfillment process. The increase in the share of outsourced warehousing services is mainly due to companies using the warehousing capabilities of their partners to cope with situations where their regular warehousing cannot meet the requirements. We can only speculate about the possible reasons for this mode of operation in warehousing, and partly base the following observations on limited comments we have received from the respondents. In recent years, an increasing awareness of companies about the importance of mitigating the negative effects of demand uncertainty has forced them to become more agile, actively developing logistics practices to cope with seasonality effects, supply disruptions, improved service levels and shortened lead times. In addition, developments in global logistics sector enabled logistics providers to offer new, more flexible and integrated services that enabled better integration with logistics partners and lower capital expenditures in logistics capacities for manufacturing companies (Marchet et al., 2018; Vasiliauskas & Jakubauskas, 2007; Zhu et al., 2017).

The extent of logistics outsourcing has also been assessed based on the number of different types of

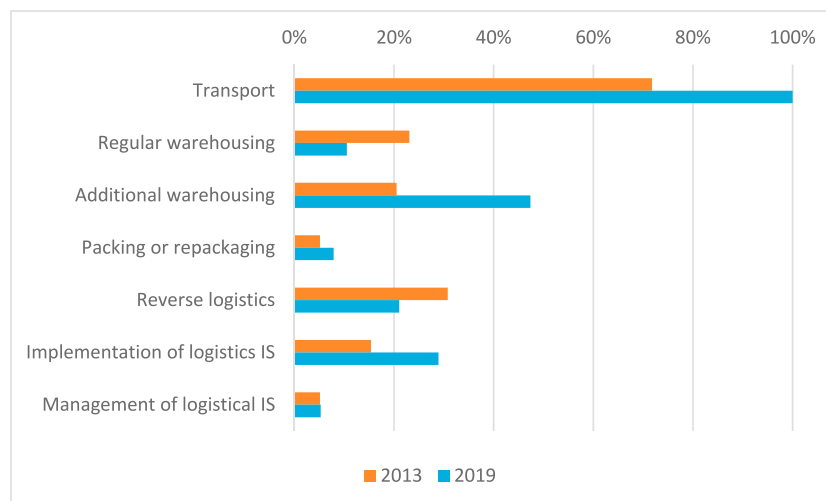


Fig. 1. The extent of outsourcing logistics activities.

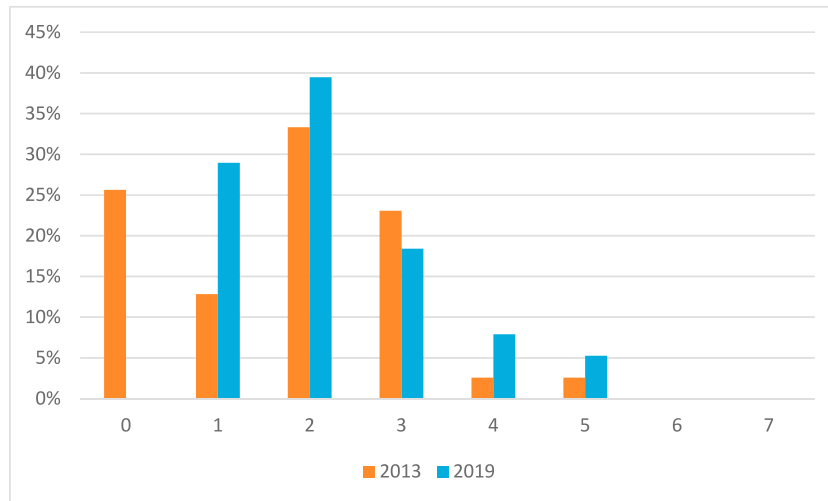


Fig. 2. Number of outsourced logistics activities.

logistics activities an outsourcee contracts out (Fig. 2). Our relatively broad list of logistics activities includes seven activities in total (the seven logistics activities in Fig. 1). In 2013, roughly one quarter of companies did not outsource any logistics activity, while in 2019 at least one (i.e. transportation) is outsourced. Most of the companies outsource two of the proposed logistics activities. Following the outsourcing of transportation is the outsourcing of activities related to additional warehousing, reverse logistics and implementation of logistics information systems. There are no outsourcees that would outsource a full (or close-to-full) range of logistics activities.

As the 2013 and 2019 surveys did not capture the same sample of companies, we asked the respondents of the 2019 survey to give their assessment on how their logistics outsourcing changed in the past five years (Fig. 3). In line with our observation above, a reasonable share of the companies (37%) outsourced additional logistics activities, while most of them (55%) did not change their outsourcing portfolio. Companies (47%) have also increased the number of outsourcers in the last five years. Based on these results, it seems most companies decided on the set of logistics activities

worthwhile to outsource. However, the number of outsourcers continues to grow, which suggests two possible reasons: companies are expanding the assortment of outsourced services within particular group of logistics activities and/or are stepping into contractual relationships with more outsourcers to perform a particular activity.

Despite the fact that 26% of companies did not outsource any logistics activity in 2013, nearly all the remaining outsourcees have used at least two or more outsourcers for one or more services (even if only for transportation). Respondents state the following reasons for engaging with multiple outsourcers: limited supply and capacity of LSPs, possibility of price negotiation, selection of the most optimal bidder for specific shipment regimes, coverage problems for certain areas, need for different types of transport, different business areas or business specificity, risk dispersion and decreased dependence on a single LSP.

### 3.2 Logistics outsourcing: pro et contra

Our results confirm that logistics outsourcing continues to rise. Additionally, we wanted to examine the main drivers and motives for logistics

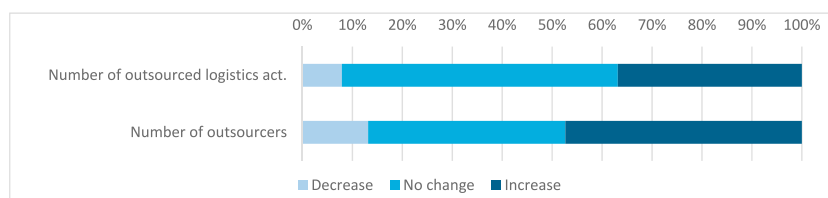


Fig. 3. The change in logistics outsourcing practices in the past 5 years.

outsourcing, as well as their possible negative aspects. In this section, we present the results about the importance of motives and disadvantages of logistics outsourcing, compare survey responses from 2013 to 2019, and highlight the differences in responses of service users that use logistics outsourcing more or less extensively.

We first analyzed the perceived importance of 10 different motives or potential benefits of outsourcing, which were selected via an analysis of the relevant literature. In the 2019 survey, we additionally included the environmental sustainability aspect, which was not the case in 2013.

In Fig. 4, we show that the average scores for all proposed motives range from 4.18 (Focus on core activities (business functions) and Possibility to increase investments in the processes we keep in the company) to 3.22 (Opportunity to expand into new markets). Interestingly, we observed consistently high average scores for a related group of motives concerning decreasing cost and focusing on the core business functions and processes (top right four categories in Fig. 4). The differences in the individual company's responses, measured by the standard deviation of individual scores across the sample, are the smallest in the case of the above-mentioned group of motives related to a decrease in cost and focus on company's core processes. The motive Pursuing the company's

environmental goals (environmental sustainability) turned out to be the motive where we observed the biggest differences in the perceived importance between respondents.

The results of the 2019 survey are quite consistent with the results from 2013. Analyzing for the statistical significance of the difference between the 2013 and 2019 scores confirmed the consistency (the Mann–Whitney test showed that the p-value for all motives exceeded 0.05). One interesting observation is that outsourcing may lead to potentially increasing investments in core processes, which respondents in 2019 recognized as a substitute for the increasing profits motive in 2013.

Next, we wanted to check whether the perception about the importance of motives is dependent upon the extent of logistics activity outsourcing by service users. Based on the number of logistics activities that outsourcees contract out (Fig. 2), we split the outsourcees into two groups: service users that do not outsource any logistics activities (26% in 2013) or outsource only transport (13% in 2013 and 29% in 2019), and service users that outsource at least two types of logistics activities (62% in 2013 and 71% in 2019). We found no statistically significant differences in responses of the two groups. While one could expect that service users utilizing more outsourcing would give higher scores, this was not the case. We point out two possible reasons for this

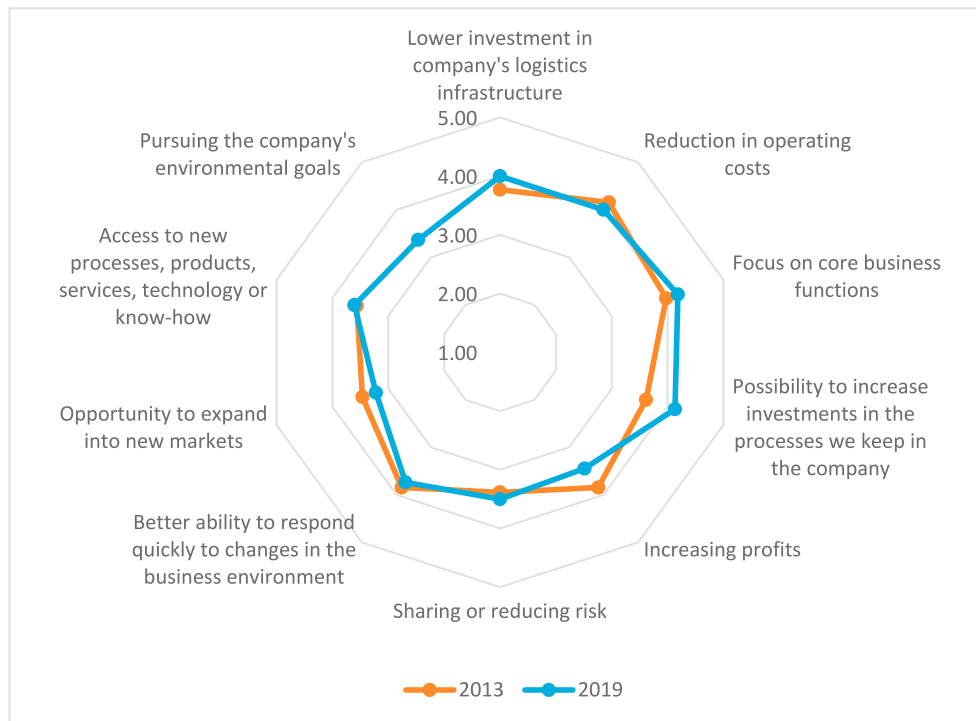


Fig. 4. The motives for outsourcing logistics activities.



observation. The survey captures the respondents' perceived importance of motives which means that even in the limited logistics outsourcing group of service users (first group) the awareness about the positive effects (anticipated or realized) is equally high. Additionally, the exact experience that the second group has with outsourcing their logistics activities might not be overly positive, and would not reflect in higher scores compared to the expectations of the first group. We observe similar behavior in our study on environmental sustainability aspects of outsourcing logistics activities (Jakšić & Budler, 2020), where respondents reported a relatively high importance of pursuing the environmental sustainability goals across the whole sample of companies, no matter to what extent the actual sustainability practices were adopted.

In the case of disadvantages of logistics outsourcing, the respondents assessed the relevance of 13 negative aspects of outsourcing. These are related to the necessary changes a company needs to undertake to set up outsourcing and restructure internal processes, the loss of internal capabilities and flexibility, and the efforts and risks of working with the outsourcing provider, namely an LSP (Fig. 5).

Among the proposed disadvantages, Outsourcing opportunism (distortion of information, evasion of obligations, breach of contract, pursuit of one-sided

profit) and Increased dependency on the outsourcer received the highest scores (3.81 and 3.73), with the Inability to promptly respond to changing demands following closely (3.70). The group of disadvantages related to setting up the outsourcing process (Inability to properly set up outsourcing, 3.14) and restructuring internal processes (Need for process reorganization, 3.05, and staff redeployment/dismissal, 3.03) consistently scored the lowest (the top left three categories in Fig. 5). Compared to the importance of motives for outsourcing, we observed that the general scores are lower in the case of disadvantages, which suggests respondents are inclined towards the positive aspects of outsourcing. Again, we did not observe any statistically significant differences when comparing the average responses to those in the 2013 survey.

Finally, we looked at the differences in responses of the two groups of companies, depending on the extent of outsourcing they use. We observed that the average scores across the proposed categories of disadvantages (the same holds in the case of the motives) vary less for the group that uses limited outsourcing compared to the other group. We could attribute this to more uniform expectations of potential disadvantages that 'light' outsourcing users base on their perception, while scores of the second group are based on their experiences with LSPs. Due to this limited experience with outsourcing in

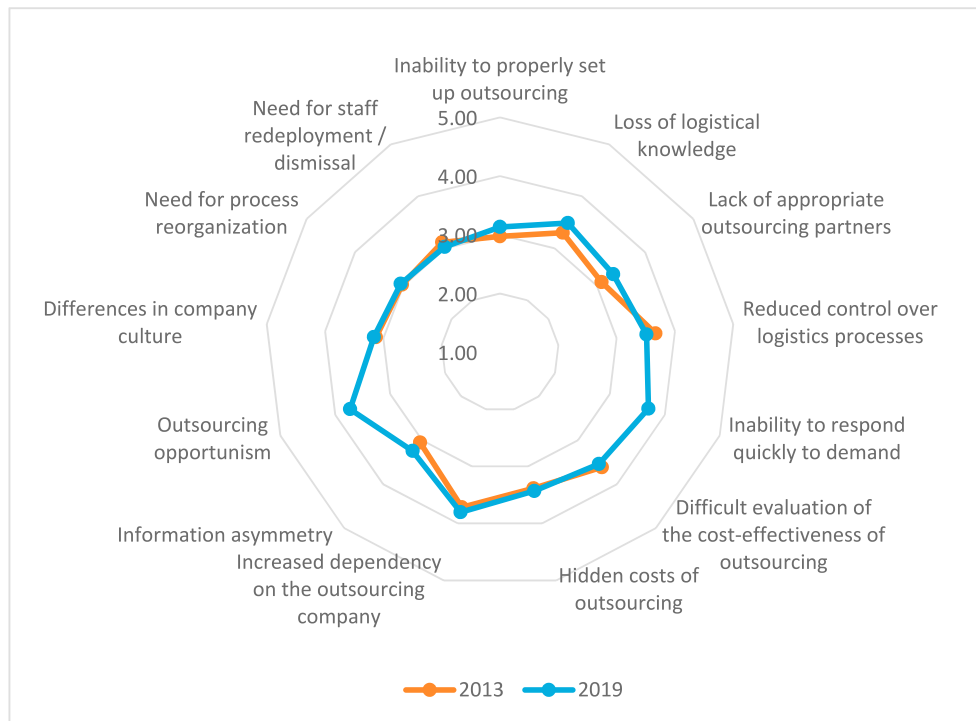


Fig. 5. The disadvantages of outsourcing logistics activities.

practice, the first group of respondents is potentially less inclined towards giving extremely low or high scores.

### 3.3 Effect of logistics outsourcing on company performance

In the final part of the survey, we analyzed the effect of logistics outsourcing on company performance. The performance effects were measured across five categories and compared to results from 2013 (in this survey only companies that were outsourcing at least one of the logistics activities provided answers). The respondents had to choose whether the performance of the company in terms of a particular category has increased, has not changed or has decreased (Fig. 6).

The increase in Distribution cost efficiency (42%) in 2019 is the prevalent performance factor, mostly as a result of the predominant outsourced activity – transportation. Surprisingly, however, 30% of outsourcees report that their distribution-related costs have increased. We believe respondents' assessments about the perceived or actual performance gains are mostly affected by their experiences with transportation outsourcing. The net effect of transportation outsourcing on costs of transportation activities is both relatively elementary to estimate and usually quite more substantial in comparison to other logistics activities. Thus, the respondents attribute the highest importance to this aspect of performance. This reasoning is further corroborated by the fact that in all other performance categories

we studied a larger share of respondents observed no change in performance, while the percentage of respondents who believe performance has suffered due to outsourcing has been consistently low.

The following two categories are related to the potential improvement in quality (27% of respondents report an increase in the Level of service quality) and competitiveness (38% of respondents report an increase in the Value added of services) related to logistics activities. By focusing more on their core business functions and processes (the primary motive for outsourcing as shown in subsection 3.2), this allowed 27% of companies to increase employee productivity and gain more industry-specific knowledge. However, for all these four performance categories, the predominant share of service users believe outsourcing does not affect their performance.

Comparing the current situation to that in 2013, we observe that the positive effect of outsourcing on performance has diminished in the last six years. At the same time, although at a smaller scale, companies report that outsourcing has negatively affected their performance lately. We attribute this interesting observation to the fact that the extent of outsourcing has been increasing constantly in the past decade (as shown in subsection 3.1) and it may be reaching saturation levels where achieving extra performance gains is not straightforward anymore. As all companies already outsource their transportation activities, the focus should turn to expanding the set of services to outsource. However, here the gains may be limited and very much

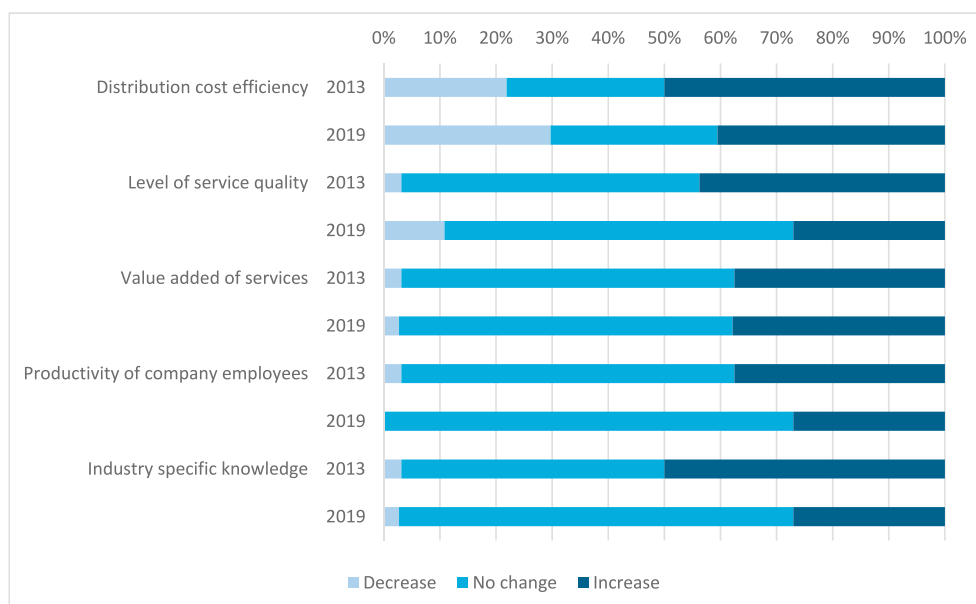


Fig. 6. The effect of logistics outsourcing on company performance.

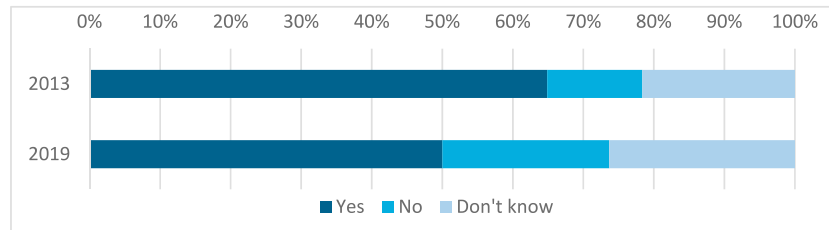


Fig. 7. Logistics outsourcing as a source of a competitive advantage (time comparison).

dependent on specifics of the industry and the SC a particular company operates in.

We conclude the results section by analyzing the general respondents' perception of the effect of outsourcing logistics activities on company competitiveness (Fig. 7). Half of the companies consider logistics outsourcing as a competitive advantage, while 24% do not. In line with the findings about the effect on company performance, we see companies believe logistics outsourcing will give them a competitive edge to a lesser degree than when compared to their responses in the 2013 survey. Additionally, we investigated whether the competitive aspect of logistics outsourcing differs depending on the extent of outsourcing a company practices (Fig. 8). We analyzed responses across three groups of companies, depending on the number of logistics activities they outsource: limited users that only outsource one activity (transportation), moderate users that outsource two logistics activities, and extensive users that outsource 3–5 activities. The moderate and extensive users recognized the contribution of their outsourcing practices to company performance to a large degree (53% of moderate users and 67% of extensive users). The gap to companies resorting only to transportation outsourcing is considerable, since only 27% consider outsourcing as a source of competitive advantage and an unexpectedly high share of companies (36%) did not observe any positive effect on their competitiveness. While this observation is not surprising, it is intriguing that we did not observe significant differences between the groups when

studying the companies' perception of motives for logistics outsourcing in Section 3.2. The awareness about the positives of logistics outsourcing is thus relatively high among all respondents, but there seems to be a discrepancy between the awareness and beliefs (and/or actual experiences) about the effects on company competitiveness.

#### 4 Discussion

To address the research question about the similarities and differences in logistics outsourcing between different countries, we proceed with a comparison of the results of our study on large Slovenian manufacturing companies with the relevant studies in other countries. We present an extensive overview of studies, with the results about the extent of logistics outsourcing presented in Table 2 and the pro et contra in Table 3. The overview in Table 2 features the country and regional aspects, ranking and frequency of outsourcing logistics activities (denoting the percentage of companies outsourcing a particular logistics activity). While rank 1 denotes the most frequently outsourced logistics activity to LSPs, rank 8 denotes the least frequently outsourced one.

The global study of logistics outsourcing on the largest LSP markets in North America, Asia and Europe captures all industries with the manufacturing sector representing 21% of all companies (Langley, 2020). The study also covers the broadest selection of logistics activities extending across our selection, also including fleet management, freight forwarding with

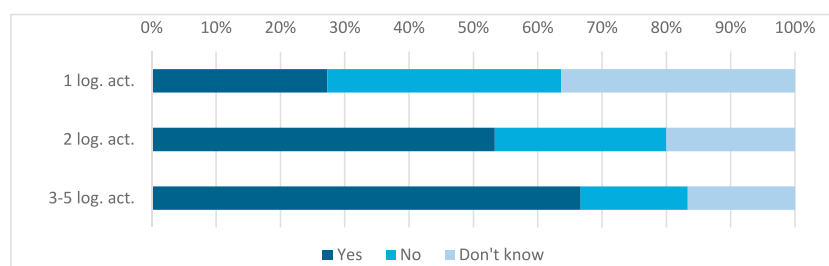


Fig. 8. Logistics outsourcing as a source of a competitive advantage (cross sectional comparison).

Table 2. The extent of logistics outsourcing in various countries<sup>a</sup>.

Region/ Country	Population/ Sector	Sample size No. of companies	Transportation	Warehousing	Reverse logistics	Packing and labeling	Implementation of logistics IS	Management of logistical IS	Fleet management	Customs brokerage	Import/ Export
<i>Our findings</i> (2019)	<i>Manufacturing</i> (large companies)	38	1 (100%)	2 (53%)	4 (21%)	5 (8%)	3 (29%)	6 (5%)			
Wilding and Juriado (2004)	Manufacturing and retail	52	1 (86%)	2 (60%)	5 (31%)	4 (40%)	6 (18%)		3 (51%)		
Lieb and Bentz (2005)	Manufacturing (500 largest)	65	1 (67%)	3 (46%)	5 (33%)	6 (25%)	8 (13%)	4 (33%)	7 (17%)	2 (58%)	
Sahay and Mohan (2006)	500 top large companies	130	1 (56%)	4 (34%)	8 (22%)	5 (29%)	7 (24%)		6 (29%)	2 (52%)	3 (35%)
Pavić (2009)	Manufacturing	32	1 (61%)	2 (13%)							
Hsiao et al. (2011)	Food-processing organizations	50/64	1 (60/75)			2 (20/13)			3 (31/41)		
Hrusecka et al. (2015)	Manufacturing	44	1 (55%)	2 (15%)			4 (5%)		3 (10%)		
Solakivi et al. (2015)	Manufacturing and retail	504/398	1 (93/97)	5	2 (70/83)		4	6			3
Langley (2020)	All sectors: Manufacturing Asia, Europe (21%)	n/a	1 (73%)	2 (73%)	5 (33%)	6 (25%)	8 (15%)	7 (21%)	9 (9%)	3 (54%)	4 (52%)

<sup>a</sup> Adapted and updated version of Lapanja (2014).

customs brokering, and import/export logistics. The ranking of logistics activities in terms of outsourcing extent is consistent with our findings to a large degree (Table 2). The quantification of the data observed from various countries corroborates our argument that conventional activities such as transportation remain most widely outsourced logistics activities. Needless to say, the process of contracting out transportation is relatively simple and does not interfere heavily with core business processes, hence making outsourcing of transportation services relatively seamless. Among the most contracted out logistics activities, a service with similar characteristics to transportation can be found: warehousing. The Schengen area comprises 26 European member states that established a 'borderless' economic area and thus simplified the international freight transportation procedures. The existence of the area contributed to a relatively low level of customs clearance services outsourcing in Europe. Unlike European companies, its Asian and American counterparts more often contract out customs clearance processes.

We observed some notable differences in packing and labeling, implementation, and management of logistics information systems. The extent of packaging and labeling outsourcing observed in our study is relatively low (8%), compared to other studies (20–40%). While we cannot pinpoint the exact reason, we believe it might be due to the differences in the methodology used, particularly related to the labeling process, which is often done at the latter stages in the SC by the outsourcer. Lieb and Bentz (2005) also report that the management of logistics IS (order fulfillment management, inventory management and customer service management) is outsourced more often than is the logistics IS implemented. In the study on the state of and trends in digital transformation in Slovenian companies, Erjavec et al. (2018) report that Slovenian companies mostly rely on their outside partners for development and implementation of their information systems and processes (52% of companies reported predominant outsourcing). Contrary to this, Kane et al. (2016) observed that on average only 20% of companies globally rely primarily on outsourcing, while a greater proportion of companies (30%) focus on developing their own capabilities and know-how.

What a more recent research reveals is a continuous use of outsourcing providers globally not withstanding the development stage of a country (see e.g. Mageto et al., 2018; Ojala et al., 2008). In fact, companies and SCs from the developing countries might contract out the logistics activities at a greater rate due to the importance of logistics to support the

Table 3. Motives for logistics outsourcing in various countries<sup>a</sup>.

Region/ Country	Reduction in operating costs	Improved productivity	Lower investment	Focus on core business functions	Expansion into new markets	Access to new know-how	Improved service	Improved responsiveness	Sharing or reducing risk
<b>Our findings (2019)</b>									
Slovenia	2		3	1	7	5		4	6
Sahay and Mohan (2006)	1	4		2	7	6	3	5	
Wilding and Juriado (2004)	3		5	4	6	1		2	
Beaumont and Sohal (2004)	2			4		1	3	6	5
Bhatnagar et al. (1999)	1	4		5		6	2	3	
Pavić (2009)	1		4	2		3			5
Aktas et al. (2011)	1			5	4		2	3	

<sup>a</sup> Adapted and updated version of Lapanja (2014).

nationwide infrastructure and economic development, as was already suggested by Aktas and Ulengin (2005). The study of Mexican companies revealed that, unlike in Europe and the U.S., they place more emphasis on less conventional services such as customer support (Arroyo et al., 2006).

Hrusecka et al. (2015) corroborate our rationale for the selection of large companies from the manufacturing sector. In a similar vein to our study, their research revealed more frequent use of logistics outsourcing among large companies. Surprisingly, findings for medium-sized enterprises and small or micro ventures are counterintuitive. The empirical investigation revealed that small or micro ventures outsource more frequently, while medium-sized companies rank with an approximately 25% lower score. Arroyo et al. (2006) observe that large international companies tend to outsource a greater number of logistics activities. They argue that this is due to the inherent nature of organizational design in large companies and because of more interactions large companies have with their business partners and customers.

As already pointed out in our literature review, the research on motives, advantages and disadvantages, and the effect of logistics outsourcing on company performance is quite scarce compared to the above studies focusing on the extent of logistics outsourcing. We present the ranking of motives for logistics outsourcing across different countries in Table 3 (rank 1 denotes the most important motive).

In our 2019 survey, we noted a shift in terms of motives, more precisely towards a group of motives with the focus on core business functions as a common theme, when compared to the 2013 study. The comparison of motive rankings in various countries confirms this, as the majority of researchers report a strong focus on decreasing the operating cost and improved access to new know-how through outsourcing. It would be interesting to see whether the shift we observed also manifested in other countries, however, we could not find any more recent papers on this topic.

The study reveals a predominantly ‘conventional’ portfolio of logistics activities among the outsourcers in different countries worldwide. Interestingly, there is a lack of ‘green logistics’ or ‘green SC management’ initiatives on the list of motives. The aspect of green logistics has been relatively extensively studied lately, but more or less exclusively from the perspective of logistics activities providers. We point out two possible reasons for the lack of environmental sustainability awareness in terms of the green outsourcing potential. First, companies facilitate activities and ISO certification in-house to

acquire the necessary know-how, as the inclusion of environmental sustainability in their mode of operation has become an imperative. And second, our recent research (Jakšič & Budler, 2020) revealed a mismatch between outsourcers' willingness to adopt the 'green-logistics practices' and the actual rate of adoption in practice.

## 5 Conclusions and future research

In this paper, we present the state and trends of outsourcing of logistics activities in large Slovenian manufacturing companies. The relevant literature that studies the outsourcing trends in logistics predominately captures the view of the logistics service providers, while the perspective of companies outsourcing their logistics activities has received much less attention. To provide additional insights into the outsourcees' perspective, we conducted two surveys in 2013 and 2019 with the goal to reveal the current state of logistics outsourcing, the main drivers for outsourcing, and the perception of the effects of outsourcing on company performance. We complement the analysis of the surveyed data with a secondary-data analysis of the data from various countries to reveal the country-specific practices in logistics outsourcing.

The general level of logistics outsourcing has been increasing in the last decade, however, the increasing use of outsourcing is predominately due to an extensive contracting out of transportation. We show that the share of companies outsourcing their transportation activities has steadily grown over the years and in this survey all respondents confirmed they have partnered with transportation service providers. A similar trend is also present in outsourcing of warehousing processes, while for other logistics activities we observed no clear trends. In general, companies increased the number of logistics activities that they outsource since the original survey in 2013, and increased the number of outsourcing partners as well. An interesting change is noted in terms of the main motives for outsourcing. In 2013, the reduction in operating costs and increasing profits were recognized as important drivers for outsourcing; the 2019 survey results, however, revealed that outsourcing enables a strong focus on core business functions. It seems that in some aspects, logistics outsourcing has entered the phase of saturation, where additional outsourcing of logistics activities is either limited and to a large extent dependent on the specific characteristics of the outsourcee. The general perception about logistics outsourcing remains positive, nevertheless, the share of respondents who see outsourcing as a

source of competitive advantage and observed an increase in company performance is lower than in 2013.

Findings from our analyses further reveal that logistics outsourcing is being reshaped through time, while the locational specifics are less obvious. We observe that the general use of logistics outsourcing is similar across different countries. Thus, it is the recent trends that are to shape the logistics outsourcing landscape. We point out two perspectives that might have a combined effect on logistics outsourcing practices in SCs in the future years: sustainability (with a strong focus on environmental sustainability) and resilience. A strong trend towards localized SCs as the alternative to global behemoths is already seen through an increased share of local sourcing, near-shoring of capacities, not only to improve the agility and responsiveness of SCs, but to form a sustainable and resilient SC. Our 2019 survey also captures some insights into environmental sustainability perspective, but the above-mentioned trends offer many opportunities for future research in the field of logistics outsourcing.

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