

# Sustainability of outbound logistics in small businesses in Serbia

Siniša Arsić, Dragutin Jovanović

Quality Management Department, Belgrade Polytechnic, Belgrade, Serbia, sinisaars@telekom.rs, djovanovic@politehnika.edu.rs

Miloš Arsić

Faculty of Maritime Academic Studies, Belgrade, Serbia, misaarsa@yahoo.com

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**Abstract:** A significant percentage of entrepreneurs, micro and small companies in Serbia do not have adequate outbound logistics capacities in order to register significant growth in business. The needs of everyday business and the demand for certain products and services is a reflection of the quality of products, and very often it is not realized in full potential, due to poorly dimensioned aspects of logistics function, or due to insufficient operational capacity of the company itself. The key problems of small companies from Serbia, which are trying to internationalize their products or services, lies in the fact that Serbia (as a country) generally has very poor outbound logistics and transport efficient solutions and capacities. In addition, transport costs and supply chain length have critical impact on the ability of a small company to meet demand outside the local market. The complexity of the problem is affected equally by internal capacities of micro and small companies, but also by weak external support for specialized outbound logistics services (transport, transshipment, etc.). These problems will be analyzed on a sample of small Serbian companies that deal with different fruit cultures processing, and are trying to conquer new markets. The result of the conducted research serves in an attempt of narrowing the problem to specific sectors of the industry, which are affected by inadequate logistics capacities. Future research could contain concrete measures to improve the delivery process and internationalization of goods for companies outside large systems (corporations), by defining concrete proposals to improve outbound logistics management capacities in Serbia.

**Keywords:** logistics, small business, sustainability

## INTRODUCTION

Logistics management is an essential component of supply chain management, used to meet customer demands through integral design, planning, control and realization of the effective movement and warehousing of related information, products and/or services from creation to destination (final market). Logistics management helps businesses and managers in their effort to reduce costs, as well as to establish full customer service. In most cases, logistics management processes begin with gathering of raw materials (supplied from local or imported capacities), all the way to the final stage of delivering finished goods to its buyer. By answering to customer needs and industry standards, logistics management procs a sustainable approach to strategy, planning and implementation. It is very closely connected to marketing and product management, and interlaces within all investments oriented towards market growth.

Previous studies on outbound logistics management in large companies (with specific business operating unit devoted to logistics management) involved numerous topics, including:

- Selecting appropriate vendors with the ability to provide transportation facilities [1],
- Choosing the most effective routes for transportation [2],
- Using software and IT resources to proficiently handle related processes [3].

Not many existing studies seem to focus on factors limiting successful exporting businesses to develop, in the case of small businesses. The results of a worldwide research on family businesses, conducted by consultant company PwC [4], refer to unpredictable market conditions as one of the major external challenges for the future of family businesses.

Studies dealing with existing literature and observing existing and potential trends regarding operations of family businesses have been narrowed, referring mainly to the EU, and then to Serbia specifically. Currently, Serbia is ranked as 48th in Doing Business's world list, having declined from 2017 (all other countries in the region face steady positions). Meanwhile, PwC reports that majority of surveyed European family businesses predict

moderate or rapid growth in the midterm, but it is not known whether this is the case in Serbia.

On the other side, this paper presents an attempt to broaden current trends in literature, and to empirically deal with an important topic in the form of a survey, which was defined with support of family business owners. The results and discussion part of the paper attempts to identify similar conclusions, but with clearly analyzed findings, related to the current state of the Serbian economy [5]. The final part of this research paper sums up and announces the future research efforts of the authors, defining a clear potential for international publishing.

When observing current knowledge about transport resources allocation and management in small business, authors concluded that majority of existing research focused key factors of logistics in large corporations (majority of those are non-family businesses), while failing to deeply analyze the share of transport costs in overall costs of production, and the fact whether small businesses employ their own logistics resources, or rely on partner relationships. Related to previous knowledge about logistics in family business management (micro and small businesses particularly), the authors needed to address these topics, by defining the following two main research questions:

Main RQ:

1. How large is the share of transport in overall operating costs of key products and services in small businesses in Serbia?
2. Are small businesses in Serbia using their own transport resources, or through employing a specialized logistics company?

Firstly, it is needed to theoretically define key differences between family and non-family businesses in terms of logistics operations, and then to define a framework for sustainable logistics management in small businesses. Through an empirical research, those differences shall be observed by correlating operating costs of outbound logistics of manufacturing companies, with high potential and need for exporting. Based on the need to position small (most often family) businesses from a rural setting to the big stage (large market), it is necessary to review existing literature about previous conclusions and similar attempts.

The following chapter presents previous findings on two main topics: key findings regarding transport and logistics in Europe and Serbia, as well as factors of sustainability of logistics in small businesses overall.

## MATERIAL RESULTS FROM LITERATURE REVIEW

Majority of fruit processing companies in Serbia (which produce at least 1.000 tonnes annually), base their exports mainly to Russia (31%) and EU countries (58% of

exports), while exports of fruits to surrounding countries is really insignificant. Following a trend for the last few years, fruit production companies from Serbia are trying to win new markets, such as Middle East or Africa [6,7].

Besides that, companies are trying to present themselves as certified for production of only a few fruit cultures:

- Apples, pears and quinces,
- Raspberries, strawberries and currants,
- Plums and cherries [6].

Transport of produced fruit (in the form of raw or semi products) in Serbia is conducted mainly by truck (with cold storage), and by airplane (when transporting to long distance markets). Predominant usage of roads for transport, results in: high transport costs [8], high risks of accidents due to incomplete network of motorways in Serbia [9], and also long hours of waiting at national borders [10].

Very important factor when organizing outbound logistics activities, is the possibility/capacity for cold storage, and availability of machines for automatic selection of best fruit products. Also, factors of influence to the outcome of logistics is quality management, particularly when dealing with highly sensitive products (such as fruit cultures). It consists mainly of:

- Standardized processes of picking crops, sorting, creating additional value of raw product,
- Packaging (crates, bags, boxes),
- Level of automatization of inbound logistics [11].

Finally, marketing activities (CRM) take place, while trying to preserve existing markets, and position the product in new markets. All of this was examined in the empirical part of this research, and main findings shall be presented in the following chapter.

A study by Credit reform [12] reveals that transport and logistics expenses hold a very high position when analyzing different industry sectors. Table 1. presents the share of companies in most developed countries of EU (Germany, Austria, France, UK), by displaying a two-year trend of companies:

- With share of logistics/transport costs up to 1% of all production costs;
- With share of logistics/transport costs exceed 1% of all production costs.

It can be seen from the table that transport and logistics activities recorded fourth place, with a declining trend of companies with logistics costs over 1% of all costs, which is positively caused mostly because of the common markets across the EU. Risks connected to transport report a rising trend, while bankruptcy and collection of receivables from foreign partners, are the main risks of internationalization efforts.

**Table 1:** Losses as direct effect of export business, displayed across different industry sectors [12]

Industry sector/type	Up to 1,0%	over 1,0%
Construction industry	73,7 (69,8)	6,5 (9,5)
Manufacturing industry	72,8 (67,5)	5,4 (10,2)
Commerce	67,6 (65,7)	9,5 (13,0)
Transport/Logistics	65,9 (65,7)	7,3 (8,6)

% of companies, () = % of companies from previous year

It appears that there is considerable potential for the growth of all European based companies, for export operations in Eastern Europe. After all, one fifth of export companies already plans to start business relations in the region of Russia or Ukraine in the next period. Countries such as Romania, Bulgaria, Croatia, Serbia and Bosnia are very popular, as export destinations (which is not the case in Serbia). Small share of European companies would like to open new sales opportunities in the countries of Benelux and Scandinavia (mostly large corporations and offshore companies).

Even countries traditionally served by German companies in the past - such as Austria, Switzerland and France - are likely to further increase their share of imports, by looking for products and services from Eastern-European based companies. Finally, a new market interest, such as Turkey, will be added to existing momentum of expansion to the East, in foreign trade.

Also, it would be interesting to analyze whether company size enables different results when considering internationalization of business activities (on regional and European level). Below is a table containing share of companies in most developed EU markets, differentiated by company size.

**Table 2:** Percentage of Exporting companies based on size [12]

	% of exporting companies (EU based)
up to 50 employees	19,6
51- 100 employees	17,7
101-250 employees	23,0
251-500 employees	18,2
501-1000 employees	8,1
More than 1000 employees	12,0

Having all in mind, it can be concluded that the majority of existing research focuses on outbound logistics of stable, large businesses with diversified network of exports, while micro and small businesses are not represented equally in existing literature.

## RESULTS OF EMPIRICAL RESEARCH AND DISCUSSION

The research questionnaire has been sent to 500 addresses, inquiring small business owners who are doing business for at least 3 years, across most dominant fruit cultures in agriculture industry of Serbia. The questionnaire was formed carefully, to avoid direct questions about costs and effects of business activities. The response rate was relatively fair, as a total of 30 owners have answered all questions. The authors made an attempt to ensure representativeness of the sample, in terms of regional inclusion and different industry subsectors (fruit cultures). The overall population of family businesses in Serbia is not defined in domestic literature, and there is very little known data about family companies.

All sources, references from literature review and empirical data used in this paper have been read and analyzed several times; the data was cross-referenced and tested. The authors based internal validity of the data gathered from the sample on the authenticity of questions. The questionnaire was developed with the help of experts in the field of agricultural manufacturing oriented towards exporting activities. It reflects actual real-life processes in a family business, to extract maximum information about the topic, from the respondents.

Distribution of the sampled companies is the following:

- 3 companies from Belgrade region;
- 4 companies from Vojvodina region;
- 15 companies from Sumadija and West Serbia region, and
- 8 companies from South and East Serbia region.

All of the sampled companies are micro and small (up to 50 employees), doing business as manufacturing companies, and mainly exporting their products (80%). Basic information about the sampled enterprises is given below with Table 3.

**TABLE 3:** Basic information about sampled companies

Question	Response	Pct. of answers (%)
Number of employees	1-9	30
	10-50	70
	51-249	0
Company type	Manufacturing	90
	Combined	10
Presence on different markets?	Only on the domestic market	20
	Yes, on Serbian and foreign markets	35
	Yes, on foreign markets only	45

When asked about the model they use to position their product in a foreign market (see table below), the owners responded mostly that their products fall under “geographical” or “national” cover brand. It can be concluded that Serbian companies and their products are not yet strong enough to be recognized as such on an international scale.

**Table 4:** Representation of products from sampled companies in foreign markets

	Response	%
What is the cover brand for Your product internationally	Region of product origin	20
	Serbia as a country	50
	Premium product/Name of company	10
	We don't export	20

This fact can contribute largely to efficiency of logistics, when it comes to packaging, because it enables all products of the same kind to be packed and sold through cover brands (from Serbia). Also, costs of branding (promotion and positioning of products) in a foreign market is more efficient that way, but it has to be supported by a specialized organization, such as USAid, within a dedicated programme [13].

Also, the owners noticed that a proper answer to competitors' offer on the (domestic and foreign) market presents the main challenge when planning all business activities (95% of all answers). Companies which report a faster growth rate in exports, are at the same time more tightly connected with outbound logistics organizations (correlation coef. equals 0.87 out of 1), reducing the risk level of operations to a minimum.

There is no discovered correlation in the sample, between company size and type of business relationship with foreign partners (private consumer or business consumer- reseller on foreign market), and this confirms the results of a previous study by Hall and Astrachan [14].

The owners regard transportation/shipping as a synonym for logistics operations in their company (85% of answers), as holding (inventory), warehousing and security of their products is less important. They were asked to rank (1 being the highest rank, 5 being the lowest rank) all parts of the transportation process, in terms of complexity and their level of involvement. Below are presented results:

**Table 5:** Ranking of transportation process activities, in terms of complexity

Transportation process activity	Mean value of Rank
Signing of the shipping contract between the loading company (may be the exporter or the importer, depending on the terms agreed upon in the sales contract) and the international logistics operator.	1.8
Collection of the goods in the exporting company's warehouse, generally using lorries. The goods are then sent to the shipping terminal (full container) or to the warehouse of the logistics operator (fractionated cargo)	2.4
Handling and storage at the logistics platform of the transport operator or terminal.	3.9
Loading and packing onto the means of transport (ship, train, lorry, or airplane) after customs processing at the departure terminal.	4.3
Shipping of the goods by the main means of transport.	4.5
Unpacking and unloading at the destination terminal and import customs processing.	4.5
Handling and storage at the shipping terminal or logistical platform of the international transport operator.	4.5
Transfer of the goods (full container) to the importing company's warehouse, or after de-consolidation of the container if fractionated cargo is involved.	4.5

It can be seen from the table, that level of involvement from sampled small businesses across the supply chain is decreasing throughout the process, and in most cases it ends with the gathering of goods to be taken over by the specialized logistics operator (with cold storage, etc). There were no reported companies which fully control (are heavily involved in) all activities of transport, which is also a confirmation of discovered correlation between small businesses and delegated transport function to a specialized outbound logistics operator.

## CONCLUSION

The theoretical review of this research paper concerning sustainability of logistics in small (family) business studies, integrally examined operations of manufacturing companies and the role of logistics and transport, with taking into consideration specific industries and the parent (regional markets) where a family company operates. The key contribution of this paper is the recognition of main factors which contribute to solving the posed main research questions. The second most important result of this paper can be found after conducting empirical research of small (family) businesses, located mainly in Western Serbia (50% of surveyed enterprises), by examining their business portfolio across operating problems of logistics and transport. The owner of the small business plays the integral part in providing support for

these processes, and he/she is directly influencing the model and outcome of logistics in small businesses, unlike diversified logistics and transport organizational sectors in large corporations. It was discovered that majority of small businesses employ external organizations for specialized outbound logistics operations, reducing their operating costs primarily and enabling themselves to become a part of a larger supply chain network. Also, the surveyed owners which do not cooperate with specialized operators, report significantly higher share of transport in overall costs, making it harder to grow and expand their operations outside of local market.

When considering limitations for proper research on this topic, there is a clear fact that the business environment in terms of family-owned and small companies hasn't been explored fully in Serbia and overall. Still, the main limitation of this research is a failure to explore surrounding markets (CEFTA region), in terms of sustainability of logistics in a small business surrounding. The owners largely agree that actual trends evident change of market share and internationalization (import/export activities) of their business, as it was previously analyzed in a larger sample of small business owners in Serbia [15].

But further analysis is needed, to be able to fully understand the perspective for the region, as it was conducted in [16,17]. There is a clear gap left for further research since there is a clear preference of the EU for further expansion and integration, at least in terms of business relationships with West Balkans countries.

Another potentially important contribution of future research is to provide and present more knowledge about "below the radar" small, family businesses in Serbia, their management structure and logistics management, as well as to describe best business practice examples from Serbia as one of developing countries with moderate and sustainable growth.

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