

The Importance of Logistic Risk for Achieving Corporate Social Responsibility Goals in Supply Chains

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Various supply chain stakeholders show an increasing interest in environmental and social issues related to business, since it has become a crucial factor in creating competitive advantage. Among the concepts that have been used – apart from CSR – are sustainable development, corporate citizenship, sustainable entrepreneurship, the triple bottom line, and business ethics. The need for CSR in supply chains should particularly be seen in light of the fact that a large part of their operations is conducted through systems of governance, which link firms together in various sourcing and contracting arrangements. Corporate social responsibility (CSR) is a concept of large relevance for business in general and within logistics specifically. Responsibility of businesses involved in supply chains can increasingly be found high on the CSR-agenda of European companies and governments. However, despite all these efforts and standards, a number of CSR issues connected to logistics issues still remain unsolved. One of these areas is the relationship between risk situations and social and environmental issues, which companies in the supply chain try to manage. In literature many different sources of logistic risks for supply chain management were discussed. Even though there is a stream of literature investigating risk in supply chains, there has been little research applied to the precise analysis of logistics risk within the framework of the CSR concept. The purpose of the research presented in this paper is to provide insight into the role of different types of risk connected to logistics processes while implementing the main areas of the CSR concept.

Keywords: Corporate Social Responsibility, logistic risks, supply chain sustainability.

1. INTRODUCTION

Various supply chain stakeholders show an increasing interest in environmental and social issues related to business, since it has become a crucial factor in creating competitive advantage. This expresses the need to ensure healthy ecosystems, social equity and good organizational governance. Among the concepts that have been used are sustainable development, corporate citizenship, sustainable entrepreneurship, the triple bottom line, and business ethics¹.

These ideas were embedded into the concept of sustainable development, i.e. “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”². Sustainable development assumes integration of the goals of a high quality of life, health and prosperity with social justice. It also relates to supply chains operations where sustainable development is defined as an approach where the economic, the environmental and the societal sphere of a business needs to be harmonized in the form of the “triple bottom line

¹ Marrewijk, M.v. (2003), *Concepts and definitions of CSR and corporate sustainability: between agency and communication*, Journal of Business Ethics, Vol. 44, Nos 2/3, pp. 95-105.

² International Standard ISO 26000, Guidance on social responsibility (*Lignes directrices relatives à la responsabilité sociétale*), First edition 2010-11-01.

approach”³. Therefore in sustainable supply chains “... environmental and social criteria need to be fulfilled by the members to remain within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria”⁴.

“...Sustainable supply chain management is the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e. economic, environmental and social, into account which are derived from customer and stakeholder requirements”⁵. Sustainable supply chain management expresses the concept of social responsibility of member organizations for the impacts of their decisions and activities on society and the environment, through transparent and ethical behaviour. that contributes to sustainable development, including health and welfare of society, takes into account the expectations of all supply chain stakeholders, is in compliance with applicable law and consistent with international norms of behaviour, is integrated throughout organizations operating in a supply chain and in its relationships.

The purpose of this paper is to present the concept of research aiming at determination of the major connections between various risk factors in the area of logistics and goals of socially responsible supply chains. The main research questions that we address are:

- **RQ1:** *What logistics risks occur most frequently in different types of companies?*

³ Carter, C., Jennings, M. (2002), *Social responsibility and supply chain relationships*, Transport Research Part E, Vol. 38, pp. 37-52; Seuring, S., Muller, M. (2008a), *Core issues in sustainable supply chain management: a Delphi study*, Business Strategy and the Environment, Vol. 17 No. 8, pp. 455-66.

⁴ Seuring, S., Muller, M. (2008a), *Core issues in sustainable supply chain management: a Delphi study*, Business Strategy and the Environment, Vol. 17 No. 8, pp. 455-66.

⁵ Seuring, S., Muller, M. (2008b), *From a literature review to a conceptual framework for sustainable supply chain management*, Journal of Cleaner Production, Vol. 16 No. 15, pp. 1699-710.

- **RQ2:** *Which of those logistics risks are the most severe ones for companies?*
- **RQ3:** *Which of those logistics risks constitute the most important barriers for the social responsibility of supply chains?*

The remaining part of the paper is organized as follows. Section 2 presents the overall concept of corporate social responsibility, extending far beyond environmental issues. The focus is set on international standards for corporate social responsibility which indicates the areas to be considered in our research. Next, the idea of the risk concept in a company is discussed, followed by presentation of the concept of measurement of risk severity. Section 4 demonstrates characteristics of the sample and applied research methods. Next section presents the results of our research concerning logistic risks classification and risk measurement reported by interviewed managers. Towards the end of the paper the conceptual matrix of social responsibility aspects and logistics risk factors was created thus illustrating logistic risk influence on core subjects of corporate social responsibility. The main contents of the paper is followed by conclusions addressing the research questions investigated in our research.

2. CORPORATE SOCIAL RESPONSIBILITY (CSR) IN SUPPLY CHAIN

The need for CSR in logistics and supply chain operations should particularly be seen in light of the fact that a large part of their activities is conducted through systems of governance, which link firms together in various sourcing and contracting arrangements⁶. Corporate social responsibility (CSR) is a concept of large relevance for business in general and within logistics specifically⁷. Responsibility of businesses involved in supply chains can increasingly be

⁶ Andersen M.A., Skjoett-Larsen T. (2009), *Corporate social responsibility in global supply chains*, Supply Chain Management: An International Journal, vol.14, no.2, pp. 75-86.

⁷ Seuring, S., Sarkis, J., Muller, M. and Rao, P., (2008), *Sustainability and supply chain management – an introduction to a special issue*, Journal of Cleaner Production, Vol. 16 No. 14, pp. 1545-51.

found high on the CSR-agenda of European companies and governments.

Research on supply chain social responsibility is multidisciplinary in nature and is based on the chain-wide consideration of many issues "...beyond the narrow economic, technical and legal requirements of the supply chain to accomplish social (and environmental) benefits along with the traditional economic gains which every member in that supply chain seeks"⁸. Where social responsibility issues have been made operational, the standard practice is the concept of Corporate Social Responsibility in logistics⁹ and in supply chain management¹⁰.

In 2010 the International Standard was developed to assist organizations in contributing to sustainable development, i.e. the International Standard ISO 26000 "Guidance on social responsibility" prepared by ISO/TMB Working Group on Social Responsibility in order to provide organizations with guidance concerning social responsibility. This International Standard provides guidance on the underlying principles of social responsibility, indicating the core subjects and issues pertaining to social responsibility. It includes the following core subjects of the social responsibility as organizational governance, human rights, labour practices, the environment, fair operating practices, consumer issues, community involvement and development¹¹.

In practice, environmental and social aspects are not equally treated – social aspects in the discussion are much less developed than the

environmental ones¹². Most of supply chain and logistics authors are oriented towards green (environmental) aspects of CSR concept with little attention on social aspects of logistics and transportation (one exception is Carter and Rogers¹³). In particular, such approach is typical for analysis of all transport operations, being also the domain of logistics service providers and their operations¹⁴. Such minimum requirements include holding ISO 14001 certification. One of the examples of studies focusing on environmental issues as well, as social aspects and their integration into business is that one of Wolf and Seuring¹⁵. However, despite all these efforts and standards¹⁶ a number of CSR issues connected to logistics issues still remain unsolved.

3. LOGISTIC RISK AND ITS MEASUREMENT

The increased complexity of logistic systems is followed by a more complicated planning and control of the related processes running within logistic systems. The logistic risk is a result of complex system structures of globally widespread supply chain networks and increased customer requirements. Many different risks and changed logistic processes' conditions clarify that logistic systems and the related logistic processes are very vulnerable and the correspondent risks have to be managed to ensure the success of the logistic

⁸ Spence, L., Bourlakis, M. (2009), *The evolution from Corporate Social Responsibility to Supply Chain Responsibility: the case of Waitrose*, Supply Chain Management: An International Journal 14/4, pp.291–302.

⁹ Carter, C., Jennings, M. (2002), *Social responsibility and supply chain relationships*, Transport Research Part E, Vol. 38, pp. 37-52.

¹⁰ Kovacs, G. (2008), *Corporate environmental responsibility in the supply chain*, Journal of Cleaner Production, Vol. 16 No. 15, pp. 1571-8.

¹¹ International Standard ISO 26000, Guidance on social responsibility (*Lignes directrices relatives à la responsabilité sociétale*), First edition 2010-11-01.

¹² Seuring, S., Muller, M. (2008b), *From a literature review to a conceptual framework for sustainable supply chain management*, Journal of Cleaner Production, Vol. 16 No. 15, pp. 1699-710.

¹³ Carter, C.R., Rogers, D.S. (2008), *A framework of sustainable supply chain management: moving towards new theory*, International Journal of Physical Distribution & Logistics Management, Vol. 38 No. 5, pp. 360-87.

¹⁴ Heras-Saizarbitoria, I., Landín, G.A., Molina-Azorín, J.F. (2011), *Do drivers matter for the benefits of ISO 14001?*, International Journal of Operations & Production Management, Vol. 31 Iss: 2 pp. 192 – 216.

¹⁵ Wolf, Ch., Seuring, S. (2010), *Environmental impacts as buying criteria for third party logistical services*, International Journal of Physical Distribution & Logistics Management, Vol. 40 Iss: 1 pp. 84 – 102.

¹⁶ Bjorklund M., (2010), *Linking strategic logistics change to labor rights*, Social Responsibility Journal, vol. 6 no. 4, pp. 580-592.

processes¹⁷. It is worth emphasizing that complexity and fragility of logistic systems is growing since the supply chains, within which they exist, are also getting more complex and vulnerable. Because of that significant growth of modern supply chain vulnerability, there is an increasing need to highlight the importance of risk in different supply chain areas like logistics.

Firstly, it is very important to distinguish between such terms as certainty, uncertainty and risk. **Certainty** means simply a *lack of doubts*, while its antonym, **uncertainty**, can be defined as *doubting in the ability of anticipating the effects of present activities*. The fundamental difference between uncertainty and risk is the possibility to measure the latter. **Risk**, understood as a measurable uncertainty, may be described¹⁸ as: *a quality that reflects both the range of possible outcomes and the distribution of respective probabilities for each of the outcomes, its severity can be calculated by following general formula:*

$$\text{Risk severity} = \text{Probability (of the event)} \times \text{Business impact (of the event)}$$

Therefore, we can manage risk, while the idea of managing uncertainty seems to be completely unrealistic¹⁹. Consequently, as this paper covers issues important for supply chain management, **supply chain risk** can be defined as: *a possibility of obtaining consequences of future events occurring within the supply chain or its environment, of known probability and impact*. It can be concluded that to properly manage risk in such complex structures like supply chain logistic system, appropriate risk identification and measurement procedures have to be adopted.

¹⁷ Bemeleit B., Schumacher J., Hans C. (2005), *Methods of Risk Assessment and Their Suitability in A Logistic Environment*. In: Symposium on Risk Management and Cyber-Informatics: RMCI \05 in the Context of the 9th Multi-conference on Systemics, Cybernetics and Informatics: SCI 2005, pp. 425–431.

¹⁸ Andersson D., Norrman A. (2003), *Managing Risk When Outsourcing Advanced Logistics*. 12th International IPSERA Conference 2003, Budapest, pp. 377-391.

¹⁹ Williams Jr. C. A., Smith M. L. and Young P. C. (2002), *Zarządzanie ryzykiem a ubezpieczenia (Risk Management and Insurance)*. PWN, Warsaw.

One of important areas is the relationship between risk situations and social and environmental issues, which companies in the supply chain try to manage. In literature many different sources of logistic risks for supply chain management were discussed. Even though there is a stream of literature investigating risk in supply chains, there has been little research applied to the precise analysis of logistics risk within the framework of the CSR concept. The purpose of the research presented in this paper is to provide insight into the different areas of risks in logistics processes in companies and their impact on social responsibility of companies within supply chain framework

4. RESEARCH METHODOLOGY AND CHARACTERISTICS OF THE SAMPLE

The research was conducted in two phases:

- field research covering logistics risk issues in supply chains,
- desk research aiming at finding the relationship between logistics risks defined in the first phase and core subjects of company social responsibility.

Field research started in 2010 and was continued in 2011. To find out many types of logistics risks, 100 companies were included in the process of detailed interviews. Those interviews aimed at answering the following questions, vital for second phase of the research:

- Q1. What risks are connected to organization's logistic activities?
- Q2. What is the frequency of logistics risks discovered in the sample?
- Q3. How high is perceived level of probability of discovered logistics risks?
- Q4. How high is perceived level of impact of determined risks?
- Q5. How high is the level of severity of those logistics risks?

After completion of the interviews, collected information was verified according to its correctness and completeness and, as a result, 83 organizations were qualified for further analysis.

83 companies qualified for further analysis were classified according to different sorts of activities complying with the statistical classification of economic activities used in the European Community (NACE Rev.2). In particular, they were classified according to an

adequate section and division. One of examined companies represented two NACE sections (so that the section analysis covers 84 cases) and three companies represented two divisions (so that the division analysis covers 86 cases). Figure 1 and Figure 2 show the split of examined companies between different NACE sections and divisions. NACE sections' symbols presented on Figure 1 have the following meaning:

- B – mining and quarrying,
- C – manufacturing,
- D – electricity, gas, steam and air conditioning supply,
- F – construction,
- G – wholesale and retail trade; repair of motor vehicles and motorcycles,
- H – transportation and storage,
- J – information and communication,
- K – financial and insurance activities,
- O – public administration and defence; compulsory social security,
- Q – human health and social work activities.

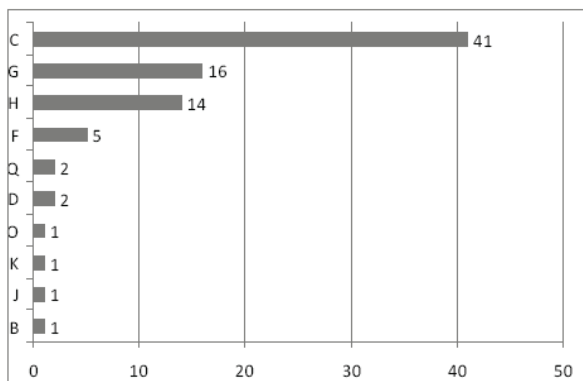


Fig. 1. Sample profile according to NACE sections

Correspondingly, the NACE divisions' numbers presented on Figure 2. have the following meaning:

- 10 – manufacture of food products
- 20 – manufacture of coke and refined petroleum products
- 22 – manufacture of rubber and plastic products
- 23 – manufacture of other non-metallic mineral products
- 28 – manufacture of machinery and equipment n.e.c.
- 29 – manufacture of motor vehicles, trailers and semi-trailers
- 32 – other manufacturing

- 35 – electricity, gas, steam and air conditioning supply
- 41 – construction of buildings
- 42 – civil engineering
- 46 – wholesale trade, except of motor vehicles and motorcycles
- 47 – retail trade, except of motor vehicles and motorcycles
- 49 – land transport and transport via pipelines
- 52 – warehousing and support activities for transportation
- OD – other divisions

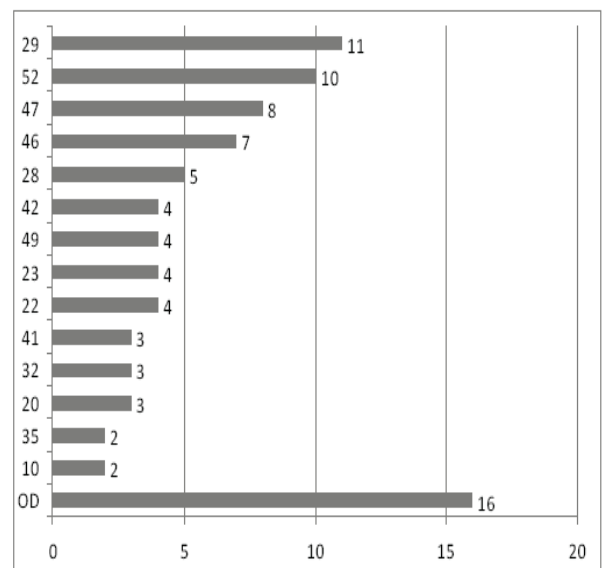


Fig. 2. Sample profile according to NACE divisions

Figure 1. demonstrates that organizations in the sample mostly belonged to manufacturing section (almost half of the sample) but there was also significant amount of companies representing such sections as wholesale and retail trade together with repair of motor vehicles and motorcycles (19%) as well as transportation and storage (17%).

Also NACE divisions in the research sample are much diversified: 86 cases represent 30 different divisions. Two divisions were slightly dominating in the sample (each over 10% of the sample), and namely: manufacture of motor vehicles, trailers and semi-trailers (division 29) and warehousing and support activities for transportation (division 52).

Interviewed organizations have very diversified profiles. It confirms that obtained research results are related to different types of economic activities.

For the described sample we proceeded with logistic risk identification and estimation of its impact.

5. LOGISTIC RISKS CLASSIFICATION AND MEASUREMENT

During the interviews many different risks impacting organizations' logistics processes were specified – altogether 28 sorts of risk were found. Thus it was necessary to classify them in order to facilitate further analysis. Classification process (according to similarity of logistics issues) produced seven main groups of logistic risks, and namely:

- **Group 1. Information management:**

- L1 – documents processing (failures in documents processing, lack of documents),
- L2 – data processing (lack of data, lack of actual data, wrong data, loss of data in favour of unauthorized entities),
- L3 – communication (lack of/wrong communication within logistic system and/or between logistics and other organization areas),
- L4 – IT solutions (lack of or insufficient solutions for logistics, software breakdowns, new software implementation; lack of hardware, hardware breakdowns),
- L5 – operating procedures (lack of or insufficient procedures/regulations).

- **Group 2. Customer service/shipping:**

- L6 – delivery mistakes,
- L7 – delivery delays,
- L8 – customer service realization (mistakes in customer service),
- L9 – inflexibility (lack of ability to fulfil huge/small orders, lack of or low responsiveness),
- L10 – forecasting (lack of or wrong demand data, problems with forecasting),
- L11 – claims processing (problems and costs connected to claims processing).

- **Group 3. Transportation processes:**

- L12 – transportation (transportation planning, crossing of borders),
- L13 – loading/unloading (lack of control during loading or unloading processes, accidents).

- **Group 4. Internal logistics:**

- L14 – inventory management (stock outs, excess stock, lack of or ill-matched inventory management methods and tools),

- L15 – warehousing (items relocations, discrepancies during stock-taking, wrong inventory holding methods),
- L16 – materials handling (problems and mistakes connected with sorting goods as well as order picking and assembly),
- L17 – packaging and labelling (mistakes during packaging and items labelling, problems with identifying goods, packaging damages),
- L18 – production support (wrong production planning and preparation, low production service level).

- **Group 5. Goods connected problems:**

- L19 – damage of goods being an effect of logistic processes,
- L20 – thefts and pilferages.

- **Group 6. Logistic staff:**

- L21 – lack of staff (high level of staff fluctuation, temporary absence, staff overburdened with work),
- L22 – skills and knowledge of logistic staff (incompetent staff, lack of trainings),
- L23 – staff cooperation (lack of or wrong cooperation),
- L24 – staff management (lack of or insufficient control, low motivation, wrong working atmosphere),
- L25 – OHS problems (accidents).

- **Group 7. Other issues:**

- L26 – logistic equipment breakdowns (transportation, material handling and other equipment breakdowns),
- L27 – capacity (lack of loading capacity in transportation or material handling means, lack of warehousing space, overall overburdening of logistic system),
- L28 – effectiveness (growth of logistics costs, staff ineffectiveness).

The largest number of sources of risks mentioned by the interviewed managers belonged to such groups as Customer service/shipping (Group 2), Information management (Group 1), Internal logistics (Group 4) and Logistic staff (Group 6). Classified logistic risks were further analyzed according to frequency of their appearance in interviews (see Figure 3).

Figure 3. shows the number of organizations indicating subsequent logistic risks and it also presents percentage of those indications in the whole sample (different shades of grey colour). It

can be seen that the most frequent risks in the sample are connected with inventory management (almost one half of responses). Such a large frequency suggests that it should be of special interest to managers handling risk in supply chain logistics. Other common logistic risks in the sample are those connected to IT solutions, damage of goods, delivery delays, logistics equipment breakdowns, data processing, effectiveness of logistics processes and documents processing.

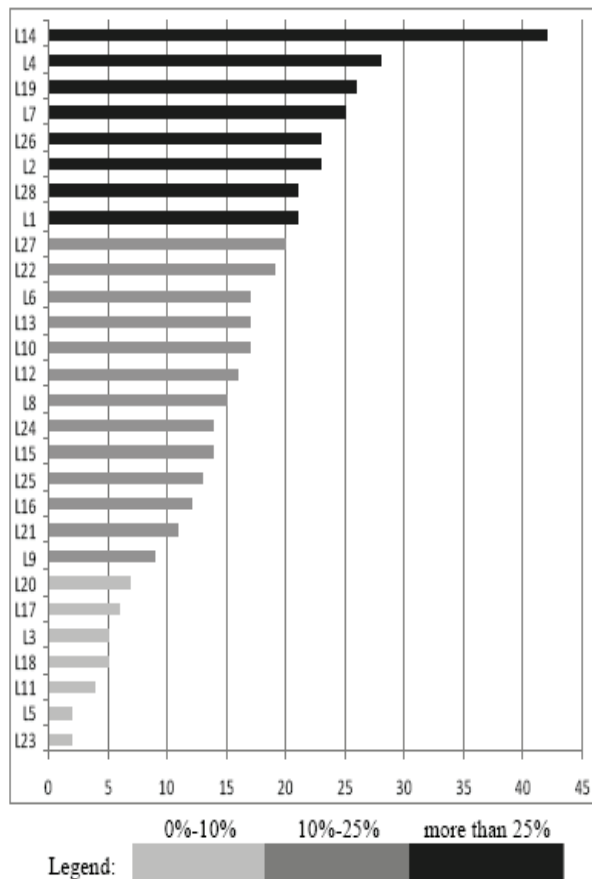


Fig. 3. Frequency of logistic risks in the sample

In order to estimate importance of risks listed in Figure 3, interviewed managers representing their companies were asked to assess the probability and impact of mentioned risks using the following scale: 1 (low probability or impact), 2 (medium probability or impact) or 3 (high probability or impact). On the basis of collected data average probability (P) and impact (I) levels of each risk were calculated and than average severity (S) of those risks was estimated by multiplying probability level times impact level.

Because risk probability and impact could be estimated on a scale of 1-3, corresponding value of risk severity could be calculated as 1-9. For further analysis two levels of the severity of logistic risk were adopted: low severity below the average level of 4,5 and high severity above the average level of 4,5 (see Table 1).

Table 1. Estimation of the level of logistic risks in examined companies

Logistic risk	P	I	S
(L10) forecasting	2,41	2,41	5,88
(L14) inventory management	2,14	2,40	5,29
(L3) communication	2,00	2,40	5,00
(L5) operating procedures	2,00	2,50	5,00
(L26) equipment breakdowns	1,91	2,57	4,87
(L15) warehousing	2,07	2,29	4,64
(L27) capacity	1,85	2,45	4,55
(L18) production support	1,60	2,80	4,40
(L13) loading/unloading	1,82	2,35	4,35
(L7) delivery delays	2,00	2,20	4,32
(L12) transportation	2,00	2,19	4,25
(L22) skills and knowledge	2,00	2,16	4,21
(L16) materials handling	2,17	2,00	4,17
(L8) cust. service realization	1,73	2,40	4,00
(L9) inflexibility	1,78	2,22	3,89
(L2) data processing	1,70	2,26	3,83
(L4) IT solutions	1,79	2,21	3,82
(L6) delivery mistakes	1,76	2,18	3,76
(L28) effectiveness	1,86	1,95	3,76
(L11) claims processing	2,00	2,00	3,75
(L19) damage of goods	1,85	1,85	3,38
(L24) staff management	1,64	1,93	3,29
(L25) OHS problems	1,46	2,46	3,23
(L21) lack of staff	1,45	2,00	3,18
(L17) packaging and labeling	1,67	1,83	3,17
(L20) thefts and pilferages	1,71	1,71	3,14
(L1) documents processing	1,81	1,71	3,05
(L23) staff cooperation	2,00	1,50	3,00

Grey-shadowed risks in Table 1. could be described by high level of severity in relation to other risks. Those seven types of risk were assumed to have the most significant influence on achieving the aims of corporate social responsibility, because of their relatively high probability and impact.

6. LOGISTIC RISK INFLUENCE ON CORE SUBJECTS OF CORPORATE SOCIAL RESPONSIBILITY

The main purpose of desk research was to formulate the concept of the relationship between logistic risks determined during field research and core subjects of company social responsibility. Our perception of those relationships, created on the basis of literature studies and practical experience of interviewed managers, is presented in Table 2.

Table 2. Conceptual matrix of impact of logistic risks on core subjects connected to environmental, social and governance (social responsibility) goals in supply chains

Logistic risks	Core subjects of social responsibility					
	Human rights	Labour practices	The environment	Fair operating practices	Consumer issues	Community involvement and development
(L5) operating procedures	++	++	++	++	++	++
(L23) staff cooperation	+	+				
(L11) claims processing				+	+	
(L3) communication		++			++	
(L18) production support		+				
(L17) packaging and labeling			+		+	
(L20) thefts and pilferages		+		+		
(L9) inflexibility				+	+	
(L21) lack of staff	+	+				+
(L16) materials handling		+			+	
(L25) OHS problems	+	+		+		
(L15) warehousing		++	++			
(L24) staff management	+	+		+	+	+
(L8) customer service realization				+	+	
(L12) transportation		+	+			+
(L6) delivery mistakes				+	+	
(L10) forecasting		++			++	
(L13) loading/unloading		+				
(L22) skills and knowledge of logistic staff		+	+	+	+	+
(L27) capacity		++			++	
(L1) documents processing		+	+		+	
(L28) effectiveness		+			+	+
(L2) data processing		+		+	+	
(L26) logistic equipment breakdowns			++	++	++	
(L7) delivery delays					+	
(L19) damage of goods being an effect of logistics processes			+	+	+	
(L4) IT solutions		+	+		+	+
(L14) inventory management		++	++	++	++	

Table 2 shows which risks (ranked according to their frequency occurred in the sample) can influence each core subject of social responsibility listed in the international standard ISO

26000:2010(E). This is a conceptual part of our research which not only suggests the relationships but also roughly estimates their strength. A single ‘+’ sign indicates moderate influence of given risk on achieving goals in particular core subject because of relatively low level of severity of that risk (compare with table 1.). Double ‘++’ sign shows stronger influence of a given logistic risk on achieving core subject goals of social responsibility because of relatively high level of severity of that risk.

Table 2 demonstrates that risks resulting from operating procedures are related to all core subjects of social responsibility. Inventory management, IT solutions, staff management and the quality of managerial staff seem to be some other risks influencing social responsibility of companies. It also indicates that the most severe logistics risks are connected to labour practices and consumer issues. Logistics risks are also important for fair operating practices and environment. The weakest connection exists probably between logistics risks and the aspects of community involvement and development and also human rights.

7. CONCLUSIONS

Our research allowed to get some insight into the nature of relations between logistics risks and environmental, social and governance (social responsibility) goals in supply chains.

Answering the RQ1: *What logistics risk occur most frequently in different types of companies?* one may indicate customer service and shipping processes, information management, internal logistics in companies and issues connected to logistic staff. Conclusions related to RQ2: *Which of those logistics risks are the most severe ones for companies?* indicate such areas as forecasting, inventory management, communication, operating procedures, logistics equipment breakdown, warehousing and capacity issues. Answer to the RQ3: *Which of those logistics risks constitute the most important barriers for the social responsibility of supply chain?* involves more conceptual approach which suggests that operating procedures which are only seldom mentioned as a source of risk create the main barrier for all core subjects of the social responsibility. Such logistics risks as production support, loading and unloading procedures and delivery delays do not seem to be

so important for social responsibility. Other less important risks concern claims processing, packaging and labelling, inflexibility, materials handling, customer service realisation and delivery mistakes.

From the supply chain perspective a group of risks connected to suppliers and supply operations was not indicated by the reviewed managers. It contradicts a common view present in literature and practice that not only customers but also suppliers are important links for any organization. Buyer-supplier relationships in the supply chain are extremely important for achieving supply chain integration²⁰. The buying company manages the suppliers in the supply base through contracts and purchasing of parts, materials, and services. Complexity of suppliers base may increase supply risk and reduce supplier innovation²¹. The role of supply risks in implementation of social responsibility concepts requires more profound explanation in our research.

On the basis of answers to all research questions listed in this paper we can assume that the most frequently indicated risk areas and the most sever ones create barriers mainly for labour practices and consumer issues.

However, our attempt to identify the main barriers for environmental, social and governance goals of companies operating in supply chains, provides only some preliminary results and as such, requires more profound further investigation. The exact strength of relationships indicated in Table 3 should be examined in more details in the form of construction of relationship models, estimating their parameters and exploring the exact directions of influence. Therefore the future step of our research will consist of a detailed survey using a proper sample size, providing statistically sound

²⁰ Mentzer J.T., DeWitt W., Keebler J.S., Min S., Nix N.W., Zacharia Z.G., 2001, "Defining Supply Chain Management". *Journal of Business Logistics* Vol. 22, No. 2, pp. 1-25

²¹ Choi, T.Y., Krause, D.R. (2006), *The supply base and its complexity: Implications for transaction costs, risks, responsiveness, and innovation*, *Journal of Operations Management*, Volume 24, Issue 5, pp. 637–652

data that would allow to estimate the exact strength and significance of indicated relationships.

Such research could provide some important information for managers in their strategic and operational decision making process. It would also be quite useful for practical implementation of social responsibility concepts in organisations operating in complex supply chains.

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