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FROM THE EDITOR

Dear Reader,

This is the second issue for 2018 and we expect to be able to publish the next issue in spring-summer 2019.

The authors are both PhD students and established academics. The articles are a heterogeneous set and cover a number of fields in the humanities and social sciences such as business, management, economics, and economic history. In this issue, we have articles by authors not only from Latvia, but also from Lithuania.

A reminder for past and future authors that the journal can be found in the EBSCO Sociology Source Ultimate database. It would be useful for you if you ensure that your university library subscribes to this particular EBSCO database.

We hope you enjoy this issue and are looking forward to the next issue.

Best wishes

Viesturs Pauls Karnups
General Editor

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NORD STREAM 2: LITMUS TEST FOR EUROPEAN UNITY

Arūnas Molis
PhD Pol. Sci.

Angela Aiello
MA

Simona Sglavo
MA

Abstract

Despite the attempts to classify Nord Stream 2 natural gas pipeline as a 'purely commercial' project, its political dimension is undisputed. In the long run, this project may have significant security and solidarity implications for both Baltic Sea region states and the entire European Union. This paper attempts to analyse risks that would derive from the implementation of the Nord Stream 2 project, presenting some options for the European Union to prevent or postpone the construction of the pipeline. The ultimate aim is to highlight the political dimension of the project and introduce arguments that the EU member states (MSs) may use in order to resist the project. The probability that the European Union will stay strong and united in this context is also an object of this research.

Key words: European Union, Russia, natural gas pipeline, Nord Stream, the Energy Union

Introduction

According to the European Commission (EC), the basic objectives of the European Energy Union are 'an open and competitive internal energy market, security of energy supply and solidarity within the Union'. Therefore, the diversification of energy routes, sources and suppliers is a necessary premise to ensure better interconnections between Member States (hereinafter MSs), towards a more efficient internal market.[1] Gazprom states that Nord Stream 2 would be in line with EU's objectives of competitive, secure and sustainable energy: energy security would be ensured, thanks to the new infrastructures and lower level of CO_2 emissions

[1] European Commission (2017)

(in comparison to the coal), the competitiveness can be enhanced by direct links to the most efficient gas reserves.[2] In the light of these diverging approaches, there is no wonder that since few years ago the 'NS2' gas pipeline has become one of the most discussed issues in international affairs.

The controversial Russian–German pipeline is generating a heated debate not only in countries where the pipeline would be passing or bypassing, but also within the entire European Union and even the United States. The dividing lines run between those states that consider the project a chance to improve Europe's energy security and those that highlight its geopolitical dimension. Germany and France have already expressed their support, underlining benefits such as the elimination of transit fees and countries. On the other hand, both the EC and Central and Eastern European (CEE) countries revealed their concerns, because Gazprom would overcome the obstacle of crossing the region, reducing the role of this area and causing a great fall in investments, especially in Ukraine.[3] They also see the project as part of Moscow's 'strategic depth' policy where Kremlin achieves its political and military goals through 'non-linear' methods, including the energy dependency.[4]

Fuel to the fire has been added when the US House of Representatives adopted and the president Donald Trump enacted sanctions against Russia in July 2017. The bill concludes that Russian regime uses energy exports to coerce its neighbours and has 'detrimental impact on the EU's energy security'.[5] Consequently, the United States introduced punitive measures against companies (all kinds, including European ones), which contribute to the development, maintenance, modernisation or repair of energy export pipelines owned by Russia. According to analysts, in addition to joint European–Russian ventures such as Blue Stream, Sakhalin-2 liquefied natural gas (LNG) plant and Baltic LNG project, the Nord Stream 2 project will be the first to suffer. What complicates the issue is an evident fact that not only Russian interests would suffer because of the sanctions, but German, Dutch, Italian and French energy companies count their potential losses as well. As the president of Lithuania supported the sanctions, the EU Commission's statement of being 'ready to act to protect European interests'[6] mirrors that deep distinction of views that exist both within the European Union and between the transatlantic partners.

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[2] Nord Stream (2017)

[3] Beckman (2016)

[4] Lasconjarias and Marrone (2016)

[5] Korteweg (2017)

[6] Jabri (2017)

Aim of this article is to look at the issue from the perspective of the Baltic–Nordic region countries: the ones that not only may experience negative geopolitical consequences of the project, but also possess some legal and political instruments to prevent the implementation of the project. What are these instruments and what is the possibility of successfully employing them? What kind of dilemmas these countries are facing then they have to take decisions against Nord Stream-2? Moreover, therefore, what is the probability that not agreeing in principle, they will do something practically against the project?

Thus, this article is policy oriented and focuses on potential consequences that the pipeline's construction would have both on common EU energy policy and on future relations between EU MSs. The positions of supporters and opponents of the project are equally investigated. Actors are assumed to have evaluated the information at their disposal and estimated the potential costs and benefits, as well as the events' liability, in order to coherently choose the best alternative form of action. Divergent national interests and the ways in which these priorities might affect the implementation of NS2 is, therefore, one of the criteria in evaluating the overall feasibility of the project.

The analysis is based, for the major part, on previous analytical and scientific research provided by several authors – both on the NS2 issue and on security environment in the Baltic Sea region. After completing an exhaustive overview on the reasons and consequences of the pipeline's construction, the Center for Eastern studies (OSW) analysts' contributions have been used a great deal, which provided both updated statistical data and insights on the political dimension of the project. Gotkowska and Szymański offered a detailed report on Nordic region position, whilst Alan Riley of the Centre for European Policy Studies has published an essential and thorough analysis of legal and policy issues. Concerning the Baltic Sea region security environment, the works of Edward Lucas and Anne Schmidt-Felzmann offered interesting and often original insight. Contributions from several institutions and think tanks, such as the Heritage Foundation and the NATO Defence College, have been used as well. The analysis of the EU's official documents and legislation remains the main method used, whilst statistical data has been retrieved from both academic articles and research papers that were consulted and from open sources, such as Eurogas, International Energy Agency (IEA) and Gasum.

The Nord Stream-2 gas pipeline: how it became controversial?

As of 2016, the biggest supplier of natural gas to the European Union was Russia, with 42% of overall imports, followed by Norway, Algeria and

only 14% ensured by LNG. Currently, there are three main pipelines linking the European Union to Russian supplies (Figure 1):

- the route through Ukraine, supplying almost 82 bcm in 2016, at 58% of its capacity (142 bcm/year);
- the Nord Stream 1 pipeline, providing 55 bcm/year and used at 80% of its capacity in 2016; and
- the Yamal–Europe pipeline, used at 100% of its capacity in 2015 and 2016, carrying 33 bcm/year.

In addition to these three principal trajectories, Russian natural gas is also supplied through pipelines to Finland, the Baltics, as well as South-East Europe through Turkey.[7] Considering all the above-mentioned, the construction of the two gas pipelines of NS2 would offer a yearly capacity of 55 bcm/year, which together with the existing Nord Stream 1 would carry almost 110 bcm/year, namely, more than 80% of Russian natural gas to the European Union.[8] Thus, despite the struggle of the European Union to diversify its suppliers, dependency on imports of natural gas from Russia remains strong. This trend may even increase in the following years, because of the growing demand, falling domestic production and the insufficient support provided by renewables.[9]

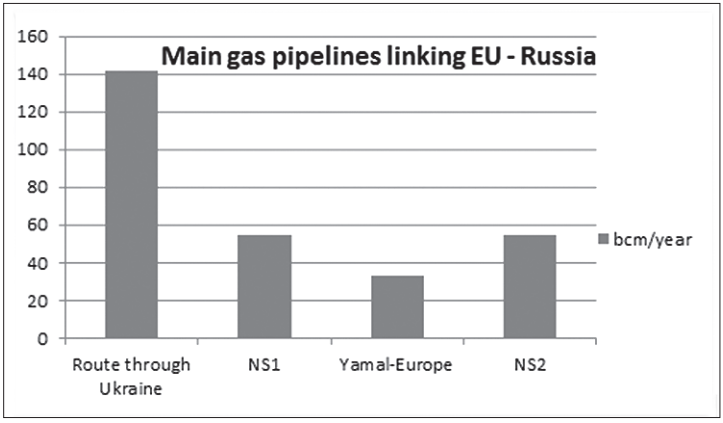

Figure 1. Main gas pipelines linking EU to Russian supplies

Gazprom underlines the fact that the imports of natural gas from Russia and Norway are almost the same, since, according to Eurogas, in 2015;

[7] European Commission (2017)

[8] *Ibid.* p. 3.

[9] *Ibid.* p. 2.

these countries were providing 28% and 27%, respectively, of the net gas supplies for the European Union. Thus, via NS2 Russia would only offer another import route, but once natural gas is carried to Europe, the responsibility is transferred to European gas companies, which will choose amongst different suppliers, according to the best offer.[10] Gazprom also provides arguments that tackle criticism provided by the sceptics of the project. They may be grouped in the following way:

1. Europe needs gas:
   (a) natural gas may represent the 'best partner', considering its low emissions of CO_2, in comparison to the other fossil fuels[11], and
   (b) the European Union urgently needs to find alternative sources of natural gas, because the domestic production is expected to decrease by 50% in the next 20 years.[12]
2. Environmental impact will stay minimal:
   (a) offshore gas pipelines have lower environmental impact in comparison to the onshore ones, because they also require smaller amounts of energy to maintain normal levels of gas pressure and flows[13], and
   (b) Effects of construction will be only limited, temporary and local, as demonstrated by the first Nord Stream pipeline.[14]
3. NS2 will enhance the security of supply:
   (a) NS2 would boost the EU's diversification strategy, because it enhances supply capacity through a separate pipeline system crossing the Baltic Sea, and
   (b) because the most efficient Russian producing fields are situated in the North of the country, the Baltic Sea offers the quickest link towards the EU market.
4. Internal market will be strengthened:
   (a) NS2 respects the development of the LNG system, and
   (b) NS2 will boost interconnections within the EU internal market.[15]
5. Effect on the price will be positive
   (a) NS2 will downsize the price as the new gas pipeline would boost competition resulting into cheaper prices, thanks to a wider range of suppliers[16]

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[10] Nord Stream (2017)

[11] *Ibid.* p. 6.

[12] *Ibid*. p. 4.

[13] *Ibid*. p. 7.

[14] *Ibid.,* p. 18.

[15] *Ibid.* p. 14.

[16] *Ibid.,* p. 16.

This is how the NS2 pipeline becomes 'flagman' for the European energy security, according to Gazprom, of course. However, the opponents provide undeniable insight that the implementation of the project would result in Gazprom's stronger influence on the EU's gas market:

1. The new gas pipeline would practically replace traditional ones, going through the Central Eastern European states (Ukraine/Slovakia transit 60–80 bcm/year, Belarus/Poland transit 33 bcm/year). This conclusion is based on forecasts (demonstrating decreasing demand of natural gas in Europe and possible diversification of Russian exports towards Asian markets), public announcements (about the 'unsafe' and 'expensive' transit via Ukraine) and factual final destination of the NS2 pipeline (distribution network from Greifswald reaches traditional, i.e. not new consumers);
2. Agreeing on exemptions from the EU law (see Section 3 for more details) would have severe political repercussions both on relations amongst the MSs and on the Union as a whole. Such a decision would
   (a) put at risk the credibility of the European Union, because it would contradict the European Council conclusion that all new infrastructures have to comply with the Third Energy Package (TEP) rules,[17] highlighting at the same time the different – and preferential – treatment reserved to NS2 in comparison to other projects.
   (b) proof of how the interests of some MS are supported despite the binding legislation, whilst others are, justly, limited by the very same rules.
   (c) compromise the relations between the MS as not only the project has been announced without any consultation at the EU level, but it also undermines the security of supply in the CEE countries; and
   (d) further encourage the proposal of such projects with the ultimate goal to bypass the EU law and, eventually, this would sneakily erode the idea of an Energy Union as it was conceived,[18] and
3. NS2 pipeline will definitely and significantly increase the overall natural gas infrastructure maintenance costs. As a consequence, national energy 'champions' will be trying to redeem investments into NS2 by maintaining at least a stable level of the natural gas consumption. This will result into the halting of the more progressive energy projects (such as development of local new type renewable technologies and LNG infrastructure) and not decreasing the dependency on the supplies from Russia.

[17] Goldthau (2016) p. 24.

[18] Riley (2016).

The entire beauty of the dispute is the lack of clarity in the EU legislation applicable to natural gas sector. In other words, this time the European Union (differently from the case of Nord Stream 1 10 years ago) has reasons and instruments to halt the completion of the new gas pipeline. The next sections analyse the key aspects of this potential course of events.

Are Western states on the Russian hook?

As shown in Figure 2, the new lines would be mainly developed along the trajectory of the already existent gas pipeline, apart from the Russian sections. According to the plans, NS2 entry point will be at the Ust-Luga area in Leningrad Oblast, running through the Russian territorial waters and exclusive economic zone (EEZ). Thence, it will proceed along the Baltic Sea, crossing the EEZs of Finland and Sweden, as well as the Danish and German EEZs and territorial waters. As it was already mentioned, its exit point will be at the Greifswald area in Germany, close to the exit point of NS1.[19] Not only a new pipeline (866 km) and three compressor stations would be built, but it is also planned to enlarge five existing compressor stations in Russia.

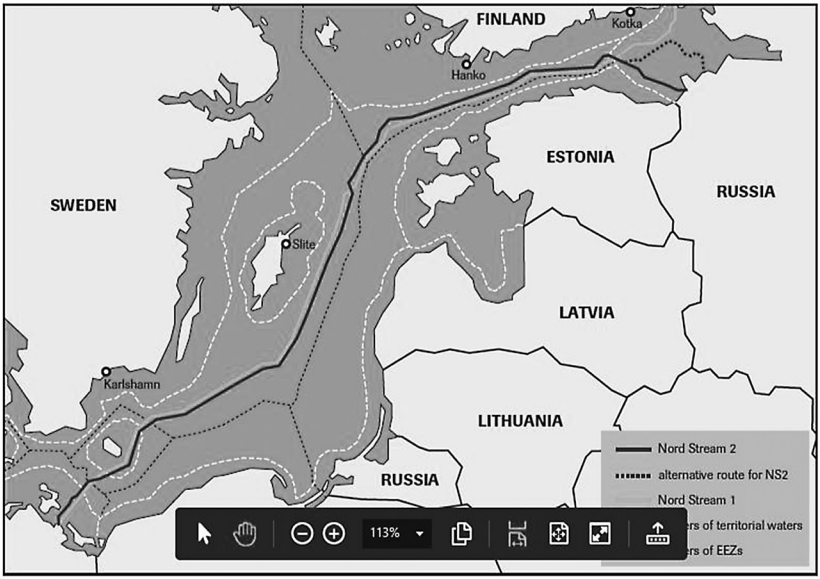

Figure 2. The Nordstream 2 pipeline

[19] Nord Stream (2017).

As NS2 pipeline project requires extensive technological and financial contribution and passes western states' or international waters, the natural question is about the involvement of the western companies and governments in the project. Their attitude will influence the intensity and success of actions of host actors who clearly oppose the project.

Thus, the company responsible for the implementation of the project is Nord Stream 2 AG, a consortium based not in Moscow, but in Zug, Switzerland. More significant is the western involvement, which plays on the hand of Gazprom, such as the fact that in April 2017, Nord Stream 2 AG signed financing agreements with five Western European energy companies: Engie (France), OMV (Austria), Shell (Netherlands), Uniper (Germany) and Wintershall (Germany). According to Gazprom, the European companies will provide 950 million euros each, namely, half of the total expenses (the estimated value of which is 9.5 billion euros), for the construction of the gas pipeline. Thirty percent will be supplied with long-term funds of 285 million euros; 70% instead, amounting up to 665 million euros, will be given according to the investments of Nord Stream AG. The remaining part of expenses will be covered by Gazprom, which preserves its position as the only stakeholder of Nord Stream 2 AG.[20]

It is worth mentioning here that the original project of NS2 was with the direct ownership of some western energy giants. It had to be based on a consortium formed by Gazprom, owning only 50% stake, and the above-mentioned European companies, with 10% stake each. The change occurred after Poland's Office of Competition and Consumer Protection expressed its concerns regarding the possible drawbacks on competition, deriving from the pre-planned division of shares.[21] This way participation of European companies remained limited to financial contribution, without being unable to enter the originally planned consortium.[22] This change in essence happened because of the EU anti-monopoly regulations – the ones Gazprom tries to avoid reaching the deals with national regulators and legislators in the project supporting countries.

Another aspect of western involvement and the importance of the European versus national legal framework concerns pipelines that are being used or will be built to distribute the gas across the continent after it reaches Germany. First of all, it seems that utilisation of the OPAL and NEL pipelines in Germany purely for Gazprom's needs may contradict the EU requirement of the third-party access (TPA). However, the EU institutions stay silent on the issue compromising in this way not only the EU solidarity

[20] Bajczuk, Kardaś and Agata Łoskot-Strachota (2017)

[21] *Ibid.*

[22] Jakóbik (2016)

and unity, but also very concrete implementation of the whole Third EU TEP. Despite the sanctions policy, the new pipelines are being planned for the same purpose of bringing Russian gas bypassing Ukraine. An important land branch of the new gas pipeline would be EUGAL (with a maximum of 51 bcm/year), crossing Germany, in parallel to the already existent OPAL.[23] If implemented, GASCADE would strengthen its position in the German market, as well as its control of the gas infrastructure in the East of the country. Europe becomes a hostage of its own greedy and uncoordinated policy where the application of double standards is a norm.

Legal and political arguments to halt the project

The planning and construction process of NS2 is conducted under the provisions of the United Nation Convention on the Law of the Sea (UNCLOS) and the Espoo Convention.[24] According to these, countries enjoy regulatory prerogatives with respect to pipelines laid in their EEZs. In the event that pipelines are laid in their EEZs and/or on the continental shelf, states have the right to delineate the course and/or set out the terms for the laying of the pipelines and exercise jurisdiction over them.

In addition to that, the EU Treaties and the relevant secondary EU laws extend to the EEZ of the EU MS. First of all, the provisions of the TEP and the legal acts associated with the EU Energy Union, which was launched in February 2015 and became one of the 10 priorities of the Junker's Commission. No provision of TEP includes argument to support the point that the NS2 gas pipeline, in its part located in the territory of the European Union, is not subject to the provisions of TEP. On the contrary, provisions of TEP contain a number of regulations and provisions supporting the fact that transmission gas pipelines are fully subject to the regulatory requirements provided for in the TEP in the territory of the European Union. No exemption in this regard is foreseen for the transmission pipelines connecting an MS with a Third Country.

Thus, in principal, there are no objections that domestic law and the EU law are fully applicable to the extension of NS2 entering the territorial

[23] EUGAL, similar to OPAL and NEL, is a product of GASCADE, a joint venture between Gazprom and BASF/Wintershall (Germany). The new line is expected to carry gas from the trans-Baltic route to the South and West of Germany and to Central Europe, Ukraine, the Balkans and Italy as soon as in 2019. On the other hand, there are still many controversial aspects linked to its construction. First of all, the actual cost of the project has not been specified yet; secondly, as for OPAL, GASCADE would encounter the restrictions imposed by the EU legislation on TPA, which could reduce its capacity by 50% (Łoskot-Strachota and Popławski (2016).

[24] Lang and Westphal (2017).

waters of Denmark and Germany. However, sceptics say that problems arise with regard to its applicability on the *offshore* part, which runs through the EEZs of two EU MSs. According to the UNCLOS, the jurisdiction of the coastal state (and, therefore, of the Union) on pipelines and cables laid on its EEZ seems to be limited to the protection of its rights of exploration of the seabed and exploitation of natural resources, as well as to the control of pollution that could derive from the construction process.[25]

However, in the light of the new EU legislation and considering the objectives of the Energy Union, application of the legal regime to the offshore part of NS2 becomes fundamental. Opponents of the project highlight its inconsistence with the TEP provisions and thus with the objectives of a resilient Energy Union, claiming EU law applicability to the subsea strings of NS2. This seems to be supported by law precedents that stated the necessity of applying the EU legislation beyond the territorial waters of the MSs in order to be fully effective.

In this case, the inconsistency of the three key[26] provisions of the 2009 Directive would be clear – namely, ownership unbundling, TPA and tariff regulations.[27] Particularly striking is the incompatibility of NS2 with the ownership unbundling provision, because Gazprom would be the sole shareholder of the project, being at the same time producer and supplier of natural gas.[28]

Moreover, the uniformity in the application of liberalisation rules prescribed by the TEP should be considered as an argument reinforcing the extension of the EU law to the offshore part of NS2.[29] On the contrary, its partial application would ultimately compromise the functioning of a single energy market and the objectives of the energy triangle. Whilst it would be possible to require an exemption from the provisions under Article 36 of the 2009 Directive, it ultimately does not seem to be a viable solution for the Nord Stream 2 AG, because the project would have to comply with precise objectives that the NS2 is unlikely to be fulfilled.[30] By contrast, it

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[25] Riley (2016).

[26] *Ibid*., pp. 19, 20.

[27] *Ibid*., pp. 10, 11.

[28] Bajczuk, Kardaś and A. Łoskot-Strachota (2017)

[29] Riley (2016)

[30] Directive 2009/73/EC provides the possibility to require an exemption from its provisions under Article 36, which can be obtained if the project respects certain conditions. Amongst these, it must enhance the competition in gas supply, the security of supply and being not detrimental for the functioning of the internal gas market. Given the different interpretations the MSs have with regard to Gazprom's role and the consequences of the project, it is unlikely that the Nord Stream 2 AG will apply for and obtain such an exemption. See Riley (2016), pp. 13

has been argued that the EEZs remain governed by the UNCLOS, because of both the paltry law precedents and the track record of past exemptions or non-application of the EU regulation to gas infrastructure.[31] Although, for instance, it is true that the first string of NS1 became operative when the TEP provisions had already been required to be implemented into national law, this cannot be considered as a precedent of immunity, especially in the light of the measures taken towards other projects because of inconsistency with the above-mentioned requirements, such as the South Stream and the Yamal pipelines.[32]

Another factor that seems to be decisive for the application of the TEP provisions is the categorisation of the pipeline system. Gazprom classified the NS2 as an import pipeline, drawing examples from existing infrastructures, namely, the NS1 and pipelines from Northern Africa to Spain and France, which do not fall under EU's internal gas market laws.[33] However, not only the category of import pipeline is non-existent, but also the Northern Africa pipelines are actually examples of upstream pipelines, because they connect gas fields to the European network.[34] Whilst, in this case, exemptions from the TEP provisions are contemplated, this is not the case for transmission pipelines, the category under which almost certainly would fall both NS1 and NS2 because they connect the Russian Unified Gas System with the German gas network.[35]

In the light of these problems and in response to calls of some EU MSs to assess the project, the EC affirmed the inconsistency of NS2 with the objectives of the Energy Union, confirming at the same time the ambiguity of the legal framework that should regulate offshore pipelines. It also confirmed the impossibility to operate in a legal void, as well as under the sole legislation of a third country. However, what it asks for is formulation of a specific regulatory regime to agree with Russia, respecting the fundamental principles of international and EU energy law and the objectives at the basis of the Energy Union. Therefore, the EC highlights the necessity to obtain a mandate from the Council in order to negotiate with the Russian Federation a specific legal regime for the offshore part of NS2.[36] The potential agreement would take into account fundamental principles of the EU energy law and international law.

[31] Goldthau (2016)

[32] Riley (2016)

[33] Nord Stream (2017).

[34] Lang and Westphal (2017)

[35] Riley (2016)

[36] Łoskot-Strachota, Kardaś and Szymański (2017)

However, the authorisation for a mandate to entail negotiations would require a qualified majority of the MSs' votes, which have very different visions of what the mandate should contain, given their divergent opinions both on Gazprom's reliability and on the consequences of the project. The danger is to have a weak mandate, which would lead to negotiations on general principles of the EU energy law without considering the TEP in its essence. Indeed, the EC seems to contemplate the possibility to avoid the imposition of the requirement of complete ownership unbundling, whilst it is unclear to what extent the TPA rule would be applied.[37] Moreover, in its Recommendation to the Council, it requires the agreement to mitigate potential negative impacts on other states, referring mainly to the damage the project would cause to the CEE countries' efforts to diversify and secure their gas supplies, as well as to the transit status of Ukraine.[38] It remains unclear how massive the potential negative impacts on one or more MSs have to be in order to halt the project.

View from the Member States

In the light of discussions that started within the EU institutions, the MSs remain strongly divided on the issue. As Poland, the Baltic and, partially, Nordic States, as well as Ukraine, oppose the project, it seems that Slovakia may be considering it positively, in order to prolong the current advantages that are derived from gas transit after 2025 (Groszkowsk & Łoskot-Strachota, 2016). However, a final decision on the approval to build NS2 will depend on the authorities of those countries crossed by the new pipeline, namely, Finland, Sweden, Denmark and Germany. The position of the Nordic region is of strategic importance for Baltic security as the Swedish Gotland Island is one of the geographic spots that would be fundamental in case of a crisis or conflict between NATO and Russia.[39] The next sections will present more details on this.

Complicated choice for Denmark

As the planned route would go not only via the economic zones of Finland and Sweden, but also via 139 km of Danish territorial waters, there is widespread hope for Denmark's refusal based on the Convention on the Law of the Sea, which would cause a deviation in the line. In addition, the laying of the pipeline could be impeded considering that to the North of

[37] Łoskot-Strachota (2017)

[38] European Commission (2017)

[39] Coffey and Kochis (2016)

the island of Bornholm; there is an important shipping route that crosses the Danish and Swedish EEZs. To the South, instead, legal controversies could slow down the process of construction, because the Polish and Danish EEZs are not clearly defined.[40] As a proof of the sceptical Danish approach, the foreign minister of Denmark joined his Lithuanian colleague whilst criticising the plans of NS2 expansion in September 2017, asking the EC to be stricter in connection to the project.[41]

In addition to that, a new Danish law could make it possible to block pipelines that run through Danish territorial waters by reference to security concerns.[42] In October 2017, Danish parliament started the discussion of the bill that would widen the scope of arguments taken into account whilst discussing the applications for pipelines that use Danish territorial waters. According to the new law, in addition to the environmental concerns, the country would take into account security, foreign policy, defence and political concerns before granting approval. As Nick Haekkerup, a spokesman for the opposition Social Democrat party stressed, 'in a situation where the Russians are acting aggressively and where Danish soldiers are about to be stationed in the Baltic countries in order to balance the situation, we have to weigh in how it [Nord Stream 2] fits our foreign policy interests'.[43] According to the press, the law could enter into force in January 2018, but it remains uncertain whether that would be quick enough to block a pending application by the builders of Russia's Nord Stream 2 gas pipeline.[44]

However, historically, the issue in Denmark has been treated only sporadically, because it causes controversial dilemmas. The country is trying to avoid a direct confrontation with the actors implied in the project: Germany, which is its main economic partner and supports NS2 and the United States and CEE countries, opposes it and represents Denmark's principal allies in security policy. Moreover, according to the Law of the Sea, not only should Denmark allow the construction of the new gas pipeline in its territorial waters, but it also has the difficult task of avoiding the overlapping of Danish and Russian interests in the Arctic. Denmark's position on NS2 is even more complicated, because of the approval given to the previous NS1, in a moment in which domestic production was diminishing. On the other hand, Danish minister of energy Lars Christian

[40] Gotkowska and Szymański (2016)

[41] BNS (2017)

[42] Kirk and Rettman (2017)

[43] *Ibid.*

[44] *Ibid.*

Lilleholt once noted that 'times change', referring to Russia's increasingly aggressive behaviour in the past 3 years[45].

Nowadays, Denmark is independent in the energy field, because it even exports both oil and natural gas and is striving to shift to renewables by 2050, which gives huge advantages to the country's decision on NS2.[46] As a consequence, there is no surprise that majority of political actors in fact support its construction, whilst only some leftists politicians, especially Social Liberal and Social Democrats, are against it. Thus, in reality, strong appeal to national law or the Law of the Sea to halt the project is hardly expected. As it has been noted by the former NATO secretary general Anders Fogh Rasmussen, Denmark could say no to a pipeline that goes through Danish waters, but in that case, Gazprom could just move the route into international waters.[47] This clearly reflects general notion in Denmark: real opposition to the project must come not from the individual states but the European Union as whole.

Hopes on Sweden

The Swedish debate on NS2 is influenced by both the country's energy situation and broader security challenges in the Baltic Sea region. Swedish imports of Russian gas are negligible, even though they would probably increase because of the Danish Tyra gas field's closure announced in 2016.[48] Notwithstanding, Sweden is strengthening its energy relations with Norway, whose imports of LNG are likely to increase after a second LNG terminal started operating in 2014. Moreover, just 10% of its national electricity production comes from fossil fuels, whilst the government set out the goal to achieve an energy mix made up of 100% renewable energy by 2040.[49] Sweden energy policy is, therefore, much more aligned with the shared objectives agreed at the EU level in comparison with other MSs, making the country one of the strongest supporters of the EU's energy market liberalisation process and of a true Energy Union.

Given the less impact, the project could have on its own supply situation, soft and hard security consequences have a greater relevance on the Swedish debate on the NS2 pipeline. The company, whose major shareholder is the Russian state-owned Gazprom, plans to use the harbour and storage facilities of Karlshamn in Blekinge and Slite on Gotland Island, thus allowing them to play a role in the logistic plans for the construction

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[45] *Ibid.*

[46] Gotkowska and Szymański (2016)

[47] Kirk and Rettman (2017)

[48] Schmidt-Felzmann (2016)

[49] *Ibid*., p. 79.

project.[50] Whilst this would bring economic benefits for the local authorities, the possible use of the Swedish ports by Nord Stream 2 AG is a source of concern, as being present in the ports; Russia has a possibility, which may lead to sabotage activities.[51] Swedish military experts also highlighted the risk of the presence of Russian navy in Swedish economic zone as a way to control the pipeline. Could these arguments serve for the purpose of blocking the construction of the NS2?

Starting with the Karlshamn, the port is located in a geographic area of strategic importance for the Swedish Armed Forces, because it is situated close to the Swedish Navy's main base in Karlskrona. On the other hand, the decision of renting Slite harbour on Gotland Island, which has been recently re-militarised, received the negative opinion of military experts and the Supreme Commander of the Swedish Armed Forces himself, who warned the decision-makers about the risks of allowing Gazprom to operate on Swedish soil.[52] Swedish military are concerned that Russia is extending its Anti-Access/Area-Denial (A2/AD) capabilities.[53] In this context, the accessibility to Gotland Island is of critical importance in order to reinforce the Baltic allies and overcome Russian A2/AD strategy. By contrast, if Gotland were to be seized by the Russian forces, there would be no possibility for NATO to intervene in the Baltic States. It can be only noticed that Gotland area is the key for the construction, operation and safeguarding of the NS2 as well.[54]

Indeed, Russia is intensifying its aggressive espionage activities against the Swedish Armed Forces, making it clear that Sweden's territory is already under heavy surveillance for military strategic purposes. As, for instance, a massive increase of reports about Russian officers posing as 'tourists' has been registered on the island of Gotland, whilst reports on such activities have increased after the Supreme Commander's decision to deploy in advance a mechanised company on the island.[55] The number of Russian military provocations against Sweden has also increased in the recent years, whilst deliberate interferences of the military vessel of the Russian Baltic Fleet disrupted several times the laying of the NordBalt cable, the electrical interconnector built between Lithuania and

[50] Gotkowska and Szymański, p.3.

[51] *Ibid.*

[52] *Ibid.*

[53] The basic idea of A2/AD is preventing and interdicting the adversary from deploying its forces into the theatre of conflict, minimizing its room of maneuver at the operational level.

[54] Lasconjarias and Marrone (2016)

[55] Schmidt-Felzmann (2016) pp. 84.

Sweden, showing the intention to hamper the integration of the Baltic energy market.[56] Renting of Karlshamn and Slite ports is likely to further increase Russia's intelligence gathering capabilities and facilitate additional sabotage activities because of the ports' strategic location.

Overall, Sweden's opposition to the NS2 seems to have been reinforced after a visit of the US Vice President Joe Biden in August 2016. Swedish scepticism on the project is linked to the fact that the domestic consumption of natural gas is very low (around 4%), with 20% of demand covered by national production and the remaining 80% by imports from Denmark. However, the government today is especially concerned about the real nature of the project, perceived as an instrument to increase Russia's economic position and political influence in Europe and to justify military operations in the Baltics as a way to protect the gas infrastructure. However, unable to appeal to the national legislation, the country looks at the EU intervention, based on its energy and climate policy and security interests. Swedish politicians are also ready to cooperate with Baltic countries on the political level to oppose NS2.

Finland: approval expected

Overall, the Finnish attitude towards the new project may be defined in terms of neutrality, as it happened for the construction of NS1. Indeed, the first project was conducted by the Russian–Finnish company North Transgas (later Nord Steam company), which, in 2005, became totally owned by Gazprom, because Fortum decided to sell its 50% stake. Nowadays, Finland look at Gazprom as a reliable partner for many reasons: first of all, it has not experienced the same interruptions of provision as in the case of CEEs; second, there are strong ties between domestic companies and Gazprom, which has also recently bought 25% stake in Gasum; moreover, natural gas represented only 7% of the total national energy consumption in 2015. In addition to that, Finland is working on the development of LNG terminals, as well as of a pipeline connection with Estonia. Consequently, no threats to security are perceived in relation to the project and on the contrary, according to some interest groups, the Finnish economy will receive many advantages, such as the creation of new job positions. [57]

The main obstacle for the implementation of the NS2 project in Finland is national EIA procedure that is fundamental to address the widespread environmental concerns of Finland. However, the EIA report showed that most of the impacts will be local and short term and mainly linked to the

[56] Lucas (2015) pp. 10

[57] Gotkowska and Szymański (2016)

construction phase.[58] EIA for Finland also noticed that the enlargement of the NS2 is a necessary action to cover the supply gaps expected in the EU-28 by 2020, because of several concomitant factors: the projected decline in domestic production of the European Union is from 131 bcm in 2020 to 97 bcm in 2030 to 66 bcm in 2050. Thus, from this point of view, Finland's approval to NS2 is largely expected, although the formal procedure still requires some other necessary phases, including Government Consent for the use of the Finnish EEZ (the exploitation right) and the permit for pipeline construction and operation according to the Water Act.[59]

Within the context of energy security, Finland seems to be a supporter of NS2 as well, although this could mean a greater dependency on Gazprom, which is already the only supplier of natural gas to the country, because of the lack of a well-developed transmission system. Yet, Finland has been working on the diversification of its energy supplies in the past few years, which translated into a growth of 38.7% of total final energy consumption by the end of 2014 (it was just 29.2% in 2005), with biofuels and hydropower as leading sectors. Moreover, an LNG import terminal was opened in Pori in September 2016 by Gasum, the construction of the Tornio Manga LNG project should be completed in 2018.[60] In addition, in 2016, the Finnish government managed to complete the renationalisation of gas utilities, thanks to the acquisition of 25% share of Gasum by Gazprom.

Summing up, Finland's attitude mainly depends on Finnish politicians' fear of a confrontation with Russia. In January 2016, a meeting between D. Medved and J. Sipila confirmed the willingness of both countries to rebuild their political relations.[61] Such a reality may be interpreted as a direct consequence of the so-called 'Finlandisation', namely, the attempt of the country to maintain good relations with its neighbour, making some concessions. Differently from many Eastern European countries, Finland did not experience a process of 'lustration', which contributed to Moscow's prolonged influence on Finnish politics during the years of the Cold War. Such a condition has been partially inherited until now, as it emerges from the opposition to Finland's access to NATO and from the strong economic ties existing between the two states.[62] Moreover, Finnish authorities clearly wish to strengthen economic ties with Russia.[63]

[58] Nord Stream (2017).

[59] *Ibid.*

[60] Gasum (2016).

[61] Jakóbik (2016).

[62] Shandra and Virkki (2016)

[63] Gotkowska and Szymański (2017)

Germany's position: business prevails

Whilst a heated debate continues to animate the whole Europe, Germany and Austria have not abandon their hopes to exploit NS2 in order to enhance their competitiveness in comparison to other European gas suppliers and obtain a new link to the Siberian fields, where they are stakeholders. The German position has been clearly expressed from the beginning: both the government and many CEOs of influential energy companies have treated NS2 as a business project, strongly supporting its implementation, considered beneficial to the national economy.

Indeed, Germany claims that the new pipeline will neither harm Ukraine nor threaten the security of supply in Central Europe. Yet, it is still unclear how this will be possible, considering the necessary transfer of significant amounts of resources to NS2, as well as the expected redirection of flows from Ukraine to new pipelines set in Germany. Furthermore, German authorities affirmed that the new pipeline should not be subject to the TEP, because it will cross the EEZ of some MSs, which should only be responsible for the concession of the permit to construct. Whilst Angela Merkel has not officially opposed the project, the deputy Chancellor and Economy Minister Sigmar Gabriel (SPD) promised that the EC would not impede the successful realisation of the project. The federal government seems to ignore the weak voices of those opposing it, such as members of the Christian Democratic Party and the Greens, which underlined the incompatibility with the country's aims to reduce CO_2 emissions and shift to renewables.[64]

In addition to the federal government, for the regional governments of Baden-Wurttemberg, Bavaria and North Rhine-Westphalia, the construction of the new gas pipeline would strengthen national energy security, offering a cheaper alternative to the use of LNG terminals in Benelux and France. Mario Mehren, CEO of Wintershall, claimed the necessity to fully use the OPAL gas pipeline to ensure the provision of natural gas to the South of Germany. Indeed, the planned closure of all German nuclear power plants is forecasted to induce a deficit of power of 4 GW, considering the government's provision of an increase in the gas share in the domestic energy mix (from 8.9% in 2016 to 23% in 2025). For this reason, Axel Botzenhardt, the CEO of Thyssengas, is in favour of a closer cooperation with Gazprom and wishes to enlarge the quantity of natural gas imported from Russia, through NS2, building a 100-km route, connecting Lower Saxony to North-Rhine-Westphalia. Yet, if analysed on a deeper level, rather than boosting domestic energy security, NS2 will simply provide additional

[64] Łoskot-Strachota (2017)

income, thanks to the transit and trade of natural gas produced in Central Europe and Ukraine.[65]

Ambiguous 'New Europe'

Then it comes to the so-called 'new European' states, first of all, the leaders of Slovakia, Poland and other CEE countries publically approach the NS2 project in the light of political implications. In this regard, they stay mostly united and jointly oppose the project noticing the need to apply provisions of the TEP to the offshore and onshore sections of the Nord Stream 2, as well negative implications of the project on Ukraine, the unity of the European Union and all other conventional arguments. Eight EU governments signing a letter objecting to the NS2 in March 2016 is a good proof of this: the president of Lithuania, the prime ministers of the Czech Republic, Estonia, Hungary, Latvia, Poland, Slovakia and Romania addressed to EC President Jean-Claude Juncker with the worry that NS2 would generate 'potentially destabilizing geopolitical consequences'.[66]

However, economic arguments are weighted in a different way, which results into divergent and contradictory attitudes of some CEE MSs, which sometimes act 'pragmatically' and do not hide a partial willingness to cooperate with Gazprom. Slovakia, for instance, was one of the signatories of the joint letter of complaint to the EC, whilst its representatives never hold back with criticism towards Berlin and Gazprom. However, it could not be ruled out that Bratislava would eventually give its approval to the construction of NS2 in case gas transit will be ensured. First, Eustream – the national transmission operator – currently has a long-term contract with Gazprom that requires an annual transport of 50 bcm until 2028, suggesting that eventual losses because of the NS2 would not be excessive. Second, Russian assurance of maintaining the Czech and Slovak gas pipeline system, as well as some transit from Ukraine to Slovakia after the implementation of NS2, was welcomed by Bratislava. Considering all the above-mentioned, it is possible that Slovakia could abandon its initial criticism in order to safeguard both its national economic interests and the interests of Eustream transmission operator.[67]

Equally, the assurance of at least the partial maintenance of the Ukrainian gas route is in the interests of Czech Republic. However, it is worth noting that the country is already connected to NS1 system, because the Gazela pipeline linking Saxony to Bavaria allows gas transit from the OPAL pipeline, which would be one of the principal distributors of Russian

[65] Popławski (2016).

[66] Sytas (2016)

[67] Groszkowski and Łoskot-Strachota (2016)

gas across the continent, after having reached Greifswald.[68] Thus, overall, NS2 potentially offers Czech Republic a chance to expand its position as a transit country through reverse flows, a factor that is undoubtedly taken into consideration by Prague despite its reservations on NS2 political implications.

Poland, by contrast, is much more concerned about the possibility that the pipeline project would ultimately jeopardise the existence of the Yamal route distributing Russian gas to the western markets. Whilst the country effectively worked on improving its security of supply, economic and logistical drawbacks, related to the profitability of its LNG terminal, as well as the damage NS2 would cause to the development of shipping, play an important role in shaping its objections. More important, Warsaw emphasises the geopolitical and foreign policy implications the project would have for the entire eastern region, thus aligning itself in a much more resolute way to the Baltic States' positions.

Seemingly, in Romania, foreign policy considerations play a decisive role as well. Although the implementation of NS2 could have repercussions for planned pipelines involving Romanian firms, the country's imports of Russian gas are negligible, whilst its gas market is much more dependent on the fate of projects such as TurkStream or South Stream. Thus, Bucharest traditional suspicion towards Moscow's intention and its support for the Ukrainian cause are the main reasons behind its objections to the Russian–German pipeline.

This logic, however, cannot be applied in the case of Hungary. Despite the potential blockade of the Ukrainian route, which would imply a reconfiguration of its supply channels, Budapest could benefit from the creation of additional interconnections with Slovakia because of NS2 implementation. Consequently, Hungary is very much likely to adopt a pragmatic approach towards the project, because geostrategic and foreign policy arguments have less prominence in its calculations.[69]

Overall, the option of joining the Russian side may not seem so much unlikely for countries such as Slovakia or Hungary, which differently from Baltic States would not face consistent political and geostrategic consequences. Gazprom's proposals of cooperation, together with hesitation and slowness of the European Union in reacting against Russian initiatives, may therefore lead certain CEE states to opt for the implementation of the project in order to minimise the already calculated disadvantages and find a good compromise to balance their gain-to-loss ratio.

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[68] Lang and Westphal (2017)

[69] *Ibid*.

Quo vadis, Europe?

Although it was expected that by the end of autumn 2017, the European Council would take decision on the issue, the MSs will definitely need additional months to elaborate the final version of the mandate.[70] How the situation could elaborate both, what regards the Commissions mandate to negotiate and the entire NS2 project in general?

It cannot be ruled out that Gazprom will manage to influence MSs' decision by proposing profitable offers of cooperation, which could persuade them that the best solution is focusing on minimising their losses.[71] This is especially the case for those countries where foreign policy consequences and geostrategic considerations are less prominent than in the Baltic States or Poland, for instance, in Slovakia or Hungary.[72] On the other hand, the Nordic countries, which have legally no possibility to halt the project, have already adopted a very diplomatic stance. The interest in having the UNCLOS applied (Denmark) or a track record of good relations with Gazprom (Finland) led them to refrain from unambiguously backing either the supporters or the opponents of the project. Sweden, by contrast, took a more firm position on the issue, highlighting the threats NS2 would pose to its national security and declaring its willingness to cooperate with the Baltic States in order to oppose it at the EU level. However, it is difficult to see how it would align itself against the large EU MSs to block a project that has practically no repercussion on its own supply situation.[73]

Overall, given the efforts the Nordic countries have made in encouraging the EC to take a more active approach on the matter, they are likely to favour any type of mandate, regardless of its content. Therefore, one possible outcome would be the achievement of a mandate in the forms envisaged by the EC in its Recommendation to the Council, which would result in the application of two different legislations for the two different parts of the pipeline system. Although Moscow still hopes that Brussels will finally confirm that the EU energy law is not applicable to the offshore part of NS2 – offering most probably in return its readiness to continue some gas transit via Ukraine after 2019[74] – the establishment of an ad hoc legal regime could be viewed as a not-so-bad solution, because a weaker regulation would equally serve the interests of the project's supporters.

By contrast, if a mandate would not be authorised because of irreconcilable divergences on what it should contain, the long-term outcomes

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[70] Łoskot-Strachota (2017)

[71] Groszkowski and Łoskot-Strachota (2016)

[72] Lang and Westphal (2017)

[73] Gotkowska and Szymański (2017)

[74] Łoskot-Strachota, Kardaś and Szymański (2017)

would eventually depend on which kind of actions the EC would pursue thereafter. As it stated the impossibility to operate in a legal void, as well as under the law of a third country, without obtaining a mandate, the project is unlikely to be implemented in the short term. In this context, a possibility could be to refer the problem back to the EC's lawyers, who would work to overcome the legal ambiguity and who most probably will find good reasons to extend the EU energy law to offshore pipelines. This would serve the interests of a truly interconnected and liberalised European internal gas market, which is the most effective way to ensure the implementation of the Energy Union's goals. Although it has been highlighted that the objectives of the Energy Union are weighted in different ways by each MS, whilst the implementation of the TEP also diverges considerably from country to country,[75] this could become the occasion to work to at least partially harmonise contrasting trends. In a broader perspective, this approach could also incentivise the assessment of pipeline systems that, nowadays, are not in line with the requirement of the TEP, namely, the NS1,[76] helping to overcome the harmful criticism of 'double standards' in evaluating energy projects.

As it was noted by the EU commissioner for competition Margrethe Vestager in Vilnius October 2017, the European Union has no legal recourse to stop NS2 being built. Referring to a Commission's proposal to negotiate a NS2 legal model with Russia on behalf of the European Union, she saw a possibility to ensure that the pipeline did not operate in a 'legal void'. According to her, that would ensure pipeline does not harm EU energy interests. However, Council's legal service said that the Commission had no mandate to do even that and that Germany would be free to veto such an agreement in any case.[77] Thus, if blocking the project fails, it will mean simply postponement of an issue that is expected to recur in the future, possibly in even more deceitful forms. Considering the timing NS2 has been proposed – just few months after the EC declared the Energy Union as one of its 10 priorities[78] – politically motivated initiatives, perhaps in a renewed international security environment, are likely to call into question the credibility of the European energy policy and its long-term objectives, with all the negative consequences this would entail.

[75] Lang and Westphal (2017)

[76] Riley (2016)

[77] Kirk and Rettman (2017)

[78] Lang and Westphal (2017), pp. 26.

Conclusions

In the light of the *renewed* Russian assertiveness towards its neighbours, the security in the Baltic Sea region has to be considered from a broader perspective. In this context, the diversion of supply from Ukraine to NS2 would cause the CEE states not only the loss of their role as transit countries, but it is likely to undermine the profitability of new diversification projects (in Poland and the Baltic States)[79] with the risk of jeopardising their integration efforts into the western European gas market and rolling them back to a condition of higher Russian leverage in their energy markets and greater supply risk.[80] Consequently, the most vulnerable countries in this context try to postpone or terminate the implementation of the NS2 pipeline and expect understanding from the more powerful actors of the international relations.

Probably the easiest way to stop the project would be the EU's Commission assessment of its incompatibility with the TEP, which is what some EU MSs are trying to obtain. However, the EC is asking the Council to start the negotiation process with Russia. It urges for a new regulatory framework to apply to the new gas pipeline, taking into account the fundamental principles of the EU energy law and international law, such as transparency of the operations of the gas pipeline, non-discriminatory tariffs, equal opportunities to all third parties to access the pipeline and separation of the activities of supply and transport.[81]

The EU MSs have different feelings about the Commission's attempts to receive the mandate for negotiations with Russia about this necessary legal framework. It is because the Commission takes a double stand in regard to relations with Gazprom: on the one hand, it says that the new gas pipeline would not support the EU's main objectives of diversification of sources, routes and suppliers; on the other hand, it wishes to have a meeting with Russian authorities as soon as possible in order to negotiate legal framework for pipeline's operation. In any case, if the project would be stopped by unified action, it will demonstrate that the Union strives to resolve geopolitical challenges through consultation and solidarity, taking into considerations the interests of all its members and remaining at the same time coherent with its declared principles. Nevertheless, most of the MSs and other actors support the creation of specific legislation for NS2, instead of conceding a mandate to the Commission. This is the position expressed by Nord Stream 2 AG, Gazprom, Germany and six European

[79] Lang and Westphal (2017), pp. 29

[80] Riley (2016) pp. 12.

[81] European Commission (2017)

transport system operators (Gas Connect in Austria, Net4Gas in Czech Republic, Fluxys, Gascade, Gasunie and ONTRAS in Germany).

Germany's position in essence is clear: Chancellor Angela Merkel treats the project as having a commercial nature, refusing any discussion referring to the political dimension.[82] However, Nordic countries find themselves in a more controversial situation. Amongst the opponents of NS2, there is widespread hope for Denmark's refusal, as it has very concrete instruments for doing it. Finland and Sweden instead seem to lack the same possibilities to delay the construction of NS2. The only chance they have in order to take time to wait for the Commission's intervention is the assessment of the environmental impact of NS2. Lacking the ability to overcome its dependency on Russian natural gas, at least in the short term, Finland is trying to avoid the politicisation of the NS2 issue.[83] With the expansion of its LNG terminals and the construction of a pipeline connection to Estonia, the Finish approach may become more sceptical.

Despite lacking the legal grounds for halting the project, Sweden could prolong the process at least in the short term, because its formal permission is required. However, Swedish government clearly tries to prevent the aggravation of the existing defence vulnerabilities vis-à-vis Russia. On the other hand, despite the economic benefits for Gotland, local authorities agreeing to increase the amount of Russian investments on the island would enhance the Russian influence in the region. Moscow could also use the NS2 as an excuse to expand its military presence in the Baltic Sea under the guise of works related to laying the gas pipeline and to the protection of gas infrastructures. Hence, what is at least expected from Sweden is that the country will improve the communication with both the local authorities and the EU MSs, in order to assure that 'commercial deals' that negatively affects national security would not be assessed only on their commercial basis.

Thus, on the one hand, there is a certain wish of the Nordic countries (strongly supported by the United States, CEEs and domestic opposition parties), to distance themselves from Russia, considering the recent tensions in Ukraine and the increasing security concerns in the Baltics. On the other hand, halting the implementation of NS2 would mean going against Germany, which is a strong supporter of the pipeline. Consequently, rather than taking a clear decision, they expect the EU Commission to prove the compatibility of the project with the TEP.[84] Yet, the EU's hesitation in taking some measures to counteract the Russian side

[82] Łoskot-Strachota (2017).

[83] Gotkowska and Szymański (2016)

[84] *Ibid.*

may result in a change of attitude of some MSs towards the approval of the project, as a way to minimise eventual losses deriving from the expected implementation of the project.

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LATVIA AND HITLER'S GERMANY: ECONOMIC RELATIONS 1933–1940[1]

Viesturs Pauls Karnups
Dr. oec.

Abstract

In the interwar years, Germany was one of the two main trading partners for Latvia (the other one was Great Britain). By 1937 some 70% of all trade was with these two nations. Latvia's economic relations with Hitler's Germany got off to a turbulent start with a boycott of German goods in 1933 (the so-called "Butter war"). After the coup d'état by Kārlis Ulmanis in 1934 economic relations continued to be strained. Particularly in relation to his policy of "Latvianising" the financial system, this affected German investments in Latvian banking. The 1932 Clearing Agreement to smooth out trading arrangements between the two countries was taken over by the Nazis and became the chief instrument of National Socialist foreign trade policy. However, Germany never dominated the trade of Latvia as effectively they did that of the Balkans. With the commencement of WWII and Germany's closing of access to the Baltic Sea, Germany's dominance of Latvian trade increased geometrically despite the exodus of Baltic Germans in late 1939 and early 1940. Up until the Soviet occupation of Latvia in June 1940 Latvia had signed a number of trade agreements with Germany. The absorption of Latvia (and the other Baltic States) by the Soviet Union has been seen as one of the triggers for "Operation Barbarossa".

Keywords: Latvia, Germany, Interwar, Economic Relations

Introduction

Latvia's relations with Hitler's Germany were turbulent from the very beginning and encompassed many aspects including economic relations. The nazification of Latvia's Baltic Germans created not only social problems, but also political and economic problems as well. Nevertheless, the Latvian government sought to maintain a neutral position in respect of the Baltic Germans and, indeed in all its relations with Hitler's Germany throughout the 1930s. It did not always succeed.

[1] A version of this article was presented at the 2018 AABS Conference at Stanford University: "The 100th Anniversary of Baltic Independence' Palo Alto, USA, 1–3 June 2018.

In the interwar years, Latvian and German economic relations was mainly confined to foreign trade and investment although other forms of economic relations such as shipping and tourism were also important.

Germany was one of the two main trading partners for Latvia (the other one was Great Britain). The first basis for Latvian trade with Germany was the 15 July 1920 treaty, which restored peaceful relations with Germany and included a resumption of trade relations. The delay in concluding a formal commercial treaty with Germany, (a treaty with Great Britain was concluded in 1923), was due mainly to unsettled claims which Latvia lodged against Germany for damages sustained during the German occupation of Latvia during and after WWI. To which Germany responded with a counter claim for structures of various kinds erected and left in Latvia. Treaty negotiations dragged on from 1921 to 1926 and it was not until both sides agreed to give up their mutual claims was it possible to sign the treaty in 1926. The treaty, which came into effect on 1 December 1926, was based upon the most favoured nation (MFN) principle and contained the Baltic and Russian clause.[2]

By 1932, Germany was still Latvia's main import partner despite the effects of the Great Depression. There were a number of reasons for this, including the fact that a large number of Latvian traders were Baltic Germans, which meant that contact with Germany was much easier for them. Moreover, a large amount of German capital, as will be shown later, was invested in Latvia's industry, commerce and banks, as well as in credits for the importation of goods from Germany. In certain sectors, such as the pharmaceutical and electrical equipment, Germany had a monopoly status in Latvian imports. Together with a growth of imports, exports also had increased up to 1929, but although there was an overall decline in trade due to the Great Depression, exports to Germany in 1932, (26.2% of total exports), were still much less than the value of imports (35.6% of total imports).[3]

In early 1932, Latvia signed a so-called bilateral "clearing" agreement with Germany. The basic idea behind bilateral clearing agreements was to even out or "balance" trade between two countries, while at the same time conserving scarce foreign currency and gold reserves. The "agreement" was an exchange of letters between the Bank of Latvia and the Reichsbank. Under this arrangement Latvian export to Germany and import from Germany generally increased. During the life of the arrangement,

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[2] The Baltic and Russian Clause stipulates that the priority rights and privileges, allowed to the Baltic States and Russia, may not be made applicable to other contracting states by virtue of the most-favoured-nation principle.

[3] See Table 1, in Karnups (2010), p. 7.

Latvia often had large sums outstanding in Germany in the form of clearing account surplus. For Latvia, it was often problem to find useful and adequate imports from Germany to make use of the frozen millions of lats.[4]

Latvia's main export to Germany was butter, which could be transported more quickly and cheaper to Germany than to Britain. In 1929, the advantages of exporting butter to Germany diminished as Germany increased the tariff on butter in the summer of that year and continued to diminish as Germany increased its tariffs year by year until in January, 1932 the tariff on butter was increased to 1 mark per kilogram.[5] It was in relation to butter exports that Latvia's economic relations with Hitler's Germany first came into conflict.

Butter and the "Butter War"

As noted above, butter an important export product for Latvia to Germany. In the three years prior to 1933, Germany imported in 1930 81.07% of all Latvian butter exported, in 1931 – 75.36% and in 1932 – 54.02%.[6] Although the percentage was falling, Germany was nevertheless still a very important market for Latvian butter. One of the reasons, for the somewhat sharp drop in 1932 was the fact of the Clearing Agreement with Germany as butter exporters were trying expand sales to hard currency markets especially Great Britain.

When Germany's new regime proclaimed a boycott of Jewish businesses on 1 April 1933, social democrats and the Jewish community in Latvia proclaimed a boycott of German goods in Latvia in June 1933 in protest. Germany's reaction was an announcement that from 12 June 1933 its borders would be closed to imports of Latvian butter. As noted above, Germany for a long time had been Latvia's largest butter export partner. In the first four months of 1933, Germany had bought more than 56% of Latvia's butter export. Therefore, this was a very unexpected move by Germany and on 13 June 1933, the Latvian government declared that on 12 June the government had issued an order that "no German goods were to be cleared by customs and let into the country… We shall not buy and we may not buy a single kilo of goods from such a country, which behaves in that way with us".[7] This mutual boycott lasted only a few days. The Prime Minister, A. Bļodnieks, announced to the Saeima [the Parliament] on

[4] Ēķis (1943), p. 99.

[5] Stranga (2015), p. 221.

[6] Ekonomists. Nr. 8, 1933, p. 313.

[7] Aizsilnieks (1968), p. 549.

30 June 1933, that after the Latvian government had given assurances that the government would take all legal steps against the proclamation of the boycott of German goods, the German government had revoked the ban on Latvian butter on 17 June[8]. In real terms, the "Butter War" had little direct effect on the trade balance between the two countries.[9] It nevertheless hastened the displacement of Germany as Latvia's main trading partner by Britain (for example, butter exports to Britain rose from 2.7 thousand tons in 1930 to 7.8 thousand tons in 1933). This decline in exports of butter to Germany is illustrated in Table 2 – from 53.7% of total butter exports in 1933 to 28.2% in 1938.

Trade with Hitler's Germany 1933–1939

German trade policy with Latvia (and Eastern Europe in general) was driven in large part by the German rearmament priority, as well a drive for German agricultural self-sufficiency. By 1936, it was clear that German agriculture had failed to provide for domestic needs and this led to an enormous increase in the importation of foodstuffs (mainly from Central and South-Eastern Europe) and other products necessary for rearmament.[10]

On 4 December 1935, another agreement was concluded between Latvia and Germany regarding the interchange of goods and services and the Veterinary Convention. Economic delegations of Latvia and Germany met regularly to draw up lists of commodities to be exchanged and to find ways to hold in balance the exports with the useful imports to be obtained in Germany. The new agreement was concluded for one year – to 31 December 1936.[11] Trade accounts with Germany were further adjusted on the basis of a new clearing agreement concluded on 31 October 1937. This agreement superseded the Clearing Convention of 1932 between the Bank of Latvia and the Reichsbank.[12] The overall picture of Latvian-German trade in the period 1933–1939 is illustrated in Figure 1.

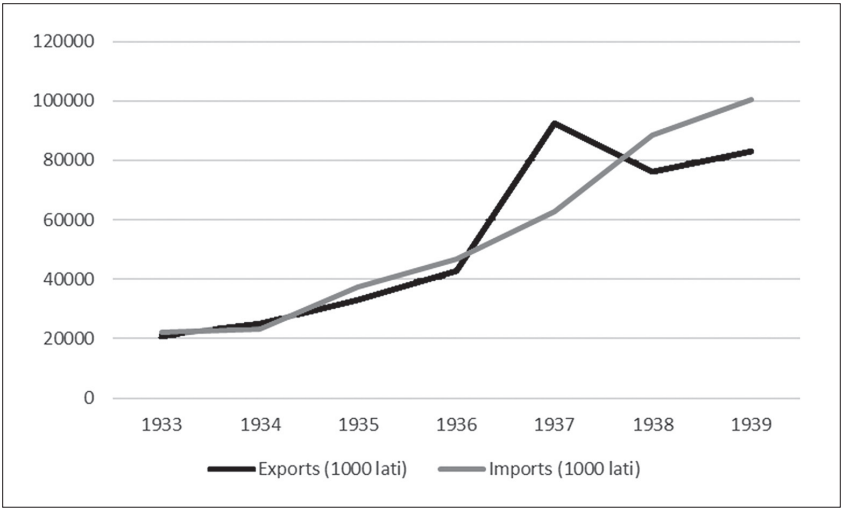
[8] Saeima transcript, 30 June 1933, p. 1062.

[9] For a detailed examination of the "Butter war" see Cerūzis (2004), pp. 144–158.

[10] For a detailed examination see Kaiser (1980), pp. 130–169, as well as pp. 263–283.

[11] Ekonomists. No. 23, 1935, p. 875.

[12] Latvian Economic Review. No. 1, 1938, p. 35.



Source: Latvijas Statistiskā gada grāmata. 1933–1939 [Latvian Statistical Yearbooks 1933–1939] – Rīga: Valsts Statistiskā Pārvalde, and Strukturbericht über das Ostland. Teil I: Ostland in Zahlen. – Rīga: Reichskommissar für das Ostland, 1942: 57–58

Figure 1. Latvian trade with Germany 1933–1939

Latvia had a number of problems with trade with Germany. The first arose from the fact of the Clearing arrangements themselves. Latvia as noted above often had large sums outstanding in Germany in the form of clearing account surplus. This was partly due to the difficulty in finding suitable German products to import. This in turn was partly due to Latvia's industrial development, which meant that many manufactured goods formerly imported from Germany were now being manufactured in Latvia, and partly because the items that Latvia needed – iron, steel, coal – were needed by Germany for its rearmament programmes.[13]

The second reason was due to the devaluation of the Latvian lat by 40% in 1936, when it left the Gold Standard and became a member of the Stirling bloc. Germany had not devalued and this meant that German goods were now even dearer than were previously. There was nearly a two-fold increase in the value of the mark relative to the lat. From 123.65 lats for 100 marks prior to devaluation to 201.50 lats for 100 marks after devaluation.[14] Theoretically, this should have worked to Latvia's advantage, however, because of the Clearing arrangements if Latvia wanted to export

[13] Ekonomists. No. 9, 1939, p. 646.

[14] Stranga (2015), p. 238.

to Germany it had to import the now dearer German goods, which could be obtained cheaper elsewhere (up to 30% cheaper).[15]

As can be seen in Figure 1, in 1937 the clearing account surplus was in Latvia's favour due the abnormally large sale of timber and timber products that year overall and to Germany in particular. Thereafter, the surplus was in Germany's favour, which meant that exporters had to suffer inordinate delays in receiving their payments.[16] The pattern of Latvia's main exports to Germany can be seen in the following Table 1.

Table 1. Latvia's Main Exports to Germany 1933–1939

	Butter		Plywood		Flax		Timber (including lumber, sleepers, pulpwood, pit props and planks)	
Year	t	Value (1000 Ls)	t	Value (1000 Ls)	t	Value (1000 Ls)	t	Value (1000 Ls)
1933	6214	11316	10679	11316	590	449	142019	2897
1934	6018	7320	12593	2970	1932	1577	178445	5832
1935	4849	6516	10101	2837	1734	2087	220795	10155
1936	5271	7682	10611	3844	1564	1978	228999	15348
1937	6818	17570	15917	6884	1208	2706	498745	40568
1938	6009	15294	17045	6882	1016	1460	273780	25196
1939*	4517	10956	4227	1558	1504	2730	66020	9711

* For first 8 months of 1939

Source: Latvijas ārējā tirdzniecība un transits – 1937–1938. [Latvian Foreign Trade and Transit. 1937–1938.] Rīga: Valsts Statistiskā Pārvalde; Mēneša Biļetens Nr. 10, oktobris 1939 [Monthly Bulletin, No. 10, October 1939]; author's own calculations

As can be seen in Table 1, 1937 was the peak year for Latvian exports to Germany. Butter exports, which had previously been declining increased as did plywood and timber. Timber and timber products (including plywood) became the main export goods to Germany. Nevertheless, Latvia resisted becoming an economic satellite of Germany and expended a great deal of effort to send its exports to hard currency countries such as Great Britain. This can be seen in percentage of total exports of the main export goods that went to Germany (Table 2).

[15] Ibid, p. 240.

[16] Leits (1958), pp. 148–151.

Table 2. Percentage of Latvia's Total Exports exported to Germany 1933–1939

	Butter	Plywood	Flax	Timber (including lumber, sleepers, pulpwood, pit props and planks)
Year	% of total butter exports	% of total plywood exports	% of total flax exports	% of total timber exports
1933	53.7	33.4	13.8	11.3
1934	50.9	35.9	34.5	20.8
1935	35.2	29.4	24.1	43.6
1936	30.3	29.6	11.8	45.2
1937	38.7	30.8	21.2	37.7
1938	28.2	33.9	8.7	39.9
1939*	28.4	10.8	12.3	26.1

* For first 8 months of 1939

Source: Latvijas ārējā tirdzniecība un transits – 1937–1938. [Latvian Foreign Trade and Transit. 1937–1938.] Rīga: Valsts Statistiskā Pārvalde; Mēneša Biļetens Nr. 10, oktobris 1939 [Monthly Bulletin, No. 10, October 1939]; author's own calculations

As Table 2 shows, although there was a decline in the percentage of butter exports (most of which then went to Great Britain), a little over an average of a third of timber exports (including plywood) was consistently exported to Germany.

Latvia's imports from Germany were conditioned in large measure by the strictures of the Clearing agreement and Germany's drive to rearmament. While Latvian exports to Germany were agricultural and forestry products, Latvian imports from Germany consisted of all kinds of manufactured goods. The chief items were industrial machinery and motors, yarns, dyes and dyestuffs, pig iron and other metal products, coal and coke, chemicals, artificial silk and other textiles, and pipes for industrial purposes. As Germany geared up for war, the types of manufactured goods that Latvia wanted became less and less available and Latvia had to settle for a range of manufactured goods that it did not really want or need to clear the Clearing surplus held by Germany (for example, large quantities of German children's toys). Moreover, Germany often violated the terms of its agreements and failed to deliver or sell to Latvia what Latvia had already paid for with its butter and timber deliveries to Germany. By 1939, Germany was 20 million lats in debt in its deliveries of goods.[17]

[17] Latvia. Toward 100 Years (2014), p. 206.

The pattern of Latvia's main imports from Germany can be seen in the following Table 3.

Table 3. Latvia's Main Imports from Germany 1933–1939

	Pipes for industrial purposes		Coal and coke		Machinery (industrial & agricultural)		Metal products (iron & steel)	
Year	t	Value (1000 Ls)	t	Value (1000 Ls)	t	Value (1000 Ls)	t	Value (1000 Ls)
1933	614	252	37964	629	1483	2533	2717	436
1934	945	362	92929	1523	1921	3388	2977	564
1935	2716	804	124651	2029	2382	4336	11458	1666
1936	2596	778	182771	3236	3469	6600	14122	2468
1937	2306	1589	146336	4815	3051	8129	6337	2627
1938	3067	1919	146821	5309	5695	14861	21626	6659
1939*	2573	1429	90565	2778	5465	12282	14207	5030

* For first 8 months of 1939

Source: Latvijas ārējā tirdzniecība un transits – 1937–1938. [Latvian Foreign Trade and Transit. 1937–1938.] Rīga: Valsts Statistiskā Pārvalde; Mēneša Biļetens Nr. 10, oktobris 1939 [Monthly Bulletin, No. 10, October 1939]; author's own calculations

As Table 3 shows, the main imports from Germany was manufactured goods and raw materials. Germany's share of the total main imports was very large. For example, 79% of total imports of pipes for industrial purposes, 73% of agricultural and industrial machinery and 66.5% of metal products (iron and steel).[18]

The shortage by the second half of the 1930s of manufactured goods for export by Germany was reduced by the encouragement of large-scale, long-term exports of arms.[19] Up to 1938, Latvia resisted making large purchases of arms from Germany, as it did not want to become dependent on Germany for arms. However, the need to reduce the Clearing surpluses forced Latvia to make large purchases of arms,[20] which from the beginning of 1939 totalled over 10 million lats of which some 5 million was on the Clearing accounts and the remainder in hard currency.[21] Needless

[18] Stranga (2015), p. 239.

[19] Kaiser (1980), p. 131.

[20] The purchase of arms does not appear in the import statistics of Latvia.

[21] Leits (1958), p. 150.

to say, between January 1939 and October 1939, Latvia received only a small fraction of the arms it had ordered from Germany.[22] The Molotov-Ribbentrop pact of 23 August 1939 put an end to receiving any more of the paid-for armaments from Germany.

German investments in Latvia 1933–1939

Foreign capital in Latvia was mainly invested in banking, industry, transport and trade. By 1927, over 60% of the equity capital of all Latvian joint-stock banks[23] was foreign owned, while foreign capital comprised 27.8% of aggregate capital in insurance, 33.9% in trade, 63.1% in transport and about 50% in industry.[24]

German capital returned to Latvia gradually after WWI. It was only after the stabilisation of the mark in 1923 that German capital began to invest in a substantial way in Latvian undertakings, especially banks. German investors were familiar with the circumstances and market in Latvia and were ready to invest across the whole spectrum of the economy. In 1927, German capital was mainly invested in the textile industry, chemical industry, metallurgy, timber and paper industry, and commerce, in particular, banking.

On 15 May 1934 under the leadership of the then Prime Minister, Kārlis Ulmanis, the Minister for War Jānis Balodis, the home guard and the army carried out a coup d'état. The regime tried to implement an economic programme aimed at reducing the role of foreign capital in industry and trade, and instead strengthen the State-owned enterprises, as well as increase the role of State monopolies and joint-stock companies. On 9 April 1935, a new commercial bank – the Credit Bank of Latvia – was established with the task of reorganising credit institutions. The bank was in fact a State-owned enterprise with an equity capital of 40 million lats.[25] By 1938, it had taken over eight private banks for liquidation. Foreign investment stock in the company capital of Latvian undertakings overall was reduced from 50.4% in 1934 to 25.4% in 1939 of which the reduction in industry was from 52.4% in 1934 to 31.9% in 1939, in commerce from 35.9% to 28.2% and in finance and banking from 62.4% to 9.7%.[26]

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[22] Stranga (2015), p. 245 and Footnote No. 566.

[23] For a brief overview of banking in Latvia in the interwar period see Hiden (2000), pp. 133–149.

[24] The Latvian Economist (1928), p. 24.

[25] Aizsilnieks (1968), p. 637.

[26] Finanču un kredīta statistika (1939), p. 172.

German capital in 1939 was mainly invested in the textile industry, chemical industry, paper industry and trade as can be seen in Table 4.

Table 4. Foreign Investment Stock of Germany in the Company Capital of Latvian Undertakings (as at 1 January). 1934–1939

Year	Textile industry (1000 lats)	Chemical industry (1000 lats)	Trade (1000 lats)	Paper industry (1000 lats)	Other (1000 lats)	Total (1000 lats)
1934	3631	3167	1332	1959	9588	19677
1935	3721	3032	1193	1959	9118	19023
1936	3729	3032	1484	203	8616	17064
1937	3064	2339	1409	1167	3790	11769
1938	2892	2520	1466	500	2478	9856
1939	2837	2308	1696	834	2015	9690

Source: Finanču un kredīta statistika (1939), p. 173

As Table 4 indicates, the reduction in German capital was gradual in most sectors, except banking, where investment fell from a high of 4 826 000 lats in 1930 to 2 862 000 lats in 1939 – a reduction of some 40%.[27]

Repatriation of Baltic Germans

One of the main conditions posed by Hitler to Stalin in August 1939 (in relation to the infamous Molotov-Ribbentrop pact) was the prior transfer of all ethnic Germans living in Estonia and Latvia to areas under German military control. In a speech to Reichstag on 6 October 1939, which was broadcast live on radio, Hitler announced that German minorities should be resettled in the Reich.

An agreement for the repatriation of Baltic Germans – Latvian citizens (and German nationals) was signed on 30 October 1939.[28] According to the agreement Baltic Germans had a choice of taking up Hitler's offer and thereby renouncing their Latvian citizenship or staying in Latvia. A report by the State Statistical Administration to Ulmanis dated 24.04.1940 states

[27] Latvijas Statistiskā gada grāmata. 1930, p. 290 and Statistikas tabulas (1940), p. 170.

[28] Feldmanis (2016), pp. 167–172.

that some 46954 persons had been released from their Latvian citizenship to repatriate to Germany.[29]

According to the agreement, emigrants were allowed to take with them some personal property, but not currency, securities, art objects, weapons, pedigree cows, or motorised means of transport. Real property was taken over by a specially established joint-stock company – *Umsiedlungs-Treuhand Aktiengesellschaft* (UTAG), which worked on the basis of Latvian law, but was completely in the hands of the German government. UTAG gradually sold private property (parcels of land, companies, etc.), but the funds acquired via the Latvian Credit Bank were transferred to Germany through Latvian export goods. By the summer of 1940, UTAG liquidated real property to the value of 183.3 million lats.[30] Nevertheless, according to UTAG figures, in June 1940 Latvia still owed Germany a total of 75.6 million lats.[31]

Latvia-Germany and World War 2

After September 1939, foreign trade became Latvia's weakest point. A great deal of what happened in foreign trade was beyond the control of Latvia and was a consequence of the war. Nevertheless, Latvia could have been better prepared in the case of the collapse of foreign trade. The commencement of the war effectively closed the Baltic Sea region to British and allied shipping as it was clear that the Royal Navy would not enter the Baltic Sea to offer protection against German warships.

Despite various attempts to maintain trade with Britain in the early part of the war, Latvia's trade was now mainly limited to Germany, the USSR and Sweden. Latvia had to meet whatever demands Germany made, and Berlin was able to fulfil most of its goals in its economic relations with Latvia. These were firstly to sever Latvia's trade with the West, especially Great Britain. Here the Latvian government managed to reject this demand[32] and tried to maintain trade links with Great Britain via Scandinavia.[33] Secondly, to force Latvia to direct its exports – except those desired by the USSR – to Germany. It was in this spirit that Latvia signed a wartime trade agreement with Germany on 15 December 1939. Latvia's trade with Germany increased rapidly as can be seen Table 5.

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[29] LVVA, 5969 f., 1. apr., 389. l., p. 2.

[30] Feldmanis (2012), p. 56.

[31] Ibid., p. 60.

[32] Zunda (1998), p. 212.

[33] For a detailed examination see Karnups (2011).

Table 5. Latvian-German trade for the period 01/09/1939–31/12/1939 and 01/01/1940–31/03/1940

	Imports		Exports		Balance of trade
	Million Ls	% of total imports in the period	Million Ls	% of total exports in the period	
01/09/1939–31/12/1939	32.23	52.50	35.19	56.50	2.96
01/01/1940–31/03/1940	14.65	42.60	13.20	38.40	–1.45

Sources: Calculated with figures are taken from Strukturbericht über das Ostland. Teil I: Ostland in Zahlen. – Rīga: Reichskommissar für das Ostland, 1942. – pp. 57–58, Mēneša Biļetens Nr. 10 [Monthly Bulletin No. 10]. – Rīga: Valsts Statistiskā pārvalde, October 1939. – pp. 1058–59, 1083–87 and LVVA, 1314. f., 5. apr., 100. l, p. 39–40

As can been from Table 5, in the four months to the end of 1939 over 50% of Latvia's imports and exports went to Germany giving in fact a positive trade balance for Latvia. In the first part of 1940, this trade balance was negative. This was partly due to the diversion of trade to the USSR as result of the "Agreement on Trade Turnover between the Latvian Republic and the Soviet Union" signed on 18 October 1939. The main exports to Germany as a whole during this period were live pigs, bacon, butter, timber and timber products (including plywood), flax and linseed. The main imports were coal, coke, metals, petroleum products, raw cotton and wool, and mineral oils.

Thirdly, Germany attempted to subordinate Latvian shipping and mobilise it for the German war economy. This was done through a combination of intimidation and use of force. On 21 December, the Germans seized the Latvian ship Atis Kronvalds (1423 BRT), which was taking 870 tons of Latvian and Lithuanian bacon and butter, as well as 202 tons of plywood to Sweden for further shipment to Britain.[34] The Ministry of Economic Warfare Weekly Report to the War Cabinet for the period 17/12 – 31/12/1939 (p. 3) noted somewhat resignedly, "It is feared that in view of this seizure no further attempts will be made to export produce from the Baltic States to the United Kingdom."[35] In the same month, the Germans also seized the Aija (575 BRT) enroute from Rīga to

[34] Stranga (1994/1), op. cit. p. 22.

[35] PRO, FO 837/37, War Cabinet, Economic Warfare, 15th Weekly Report, 17–30 December 1939.

Stockholm;[36] the Ausma (1905 BRT) [37] enroute from Rīga to Ghent with a cargo of pit-prop timber;[38] the Evertons (4101 BRT) in Kiel with a cargo of pit-prop timber;[39] the Skrunda (2414 BRT) in the Kiel Canal with a cargo of pit-prop timber for Ghent,[40] and the Spīdola (2833 BRT) in the Kiel Canal enroute to Antwerp with a cargo of pit-prop timber.[41] The Latvian Chamber of Commerce and Industry reported that:

"The number of Latvian vessels detained in Germany has grown from 8 ships on November 18, 1939, to 24 in the middle of December, which represented nearly one-third of the Latvian merchant fleet."[42]

In February and March 1940,[43] the Germans commenced arresting Latvian ships with goods addressed to Sweden on the pretext that they had on board peas and vetch, which were not mentioned in the 15 December 1939 agreement regarding the so-called "Nordseeroute". By early June 1940, the Germans were suffering an acute shortage of shipping in the Baltic Sea and as Lulea port in Sweden was open for iron ore shipments they started to put pressure on Latvia and the other neutral states around the Baltic Sea (Sweden, Finland etc.) to mobilise all free tonnage in the Baltic for the carrying of iron ore.[44] This issue was resolved on 17 June 1940 when Latvia was occupied by the Soviet Union.

Conclusion

In the interwar years, Germany was one of the two main trading partners for Latvia (the other one was Great Britain). By 1937, some 70% of all trade was with these two nations. Latvia's economic relations with Hitler's Germany got off to a turbulent start with a boycott of German goods in 1933 (the so-called "Butter war"). After the coup d'état by Kārlis Ulmanis in 1934 economic relations continued to be strained. Particularly in relation to his policy of "Latvianising" the financial system, this affected particularly German investments in Latvian banking. The 1932 Clearing

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[36] Latvijas Jūrniecības vēsture 1850–1950 (1998), p. 152.

[37] Ibid., p. 156.

[38] The 15 December 1939 agreement between Latvia and Germany prohibited the transport of pit-prop timber to Belgium and Holland.

[39] Latvijas Jūrniecības vēsture 1850–1950 (1998), p. 169.

[40] Ibid., p. 201.

[41] Ibid., p. 202.

[42] Latvian Economic Review. No. 1(17), January 1940, p. 28.

[43] LVVA, 2574. f., 3. apr., 3279. l., pp. 46–47.

[44] Confidential memo from A. Kampe (Director of the Legal Dept. in the Ministry of Foreign Affairs) to the Foreign Minister. – LVVA, 1314. f., 5. apr., 100. l., pp. 8–13.

Agreement to smooth out trading arrangements between the two countries was taken over by the Nazis and became the chief instrument of National Socialist foreign trade policy. However, Germany never dominated the trade of Latvia as effectively they did that of the Balkans. Latvia resisted becoming an economic satellite of Germany and expended a great deal of effort to send its exports to hard currency countries such as Great Britain. Latvia's imports from and exports to Germany were conditioned in large measure by the strictures of the Clearing agreement and Germany's drive to rearmament. During the life of the arrangement, Latvia often had large sums outstanding in Germany in the form of clearing account surplus. For Latvia, it was often a problem to find useful and adequate imports from Germany to make use of the frozen millions of lats. With the commencement of WWII and Germany's closing of access to the Baltic Sea, Germany's dominance of Latvian trade increased geometrically despite the exodus of Baltic Germans in late 1939 and early 1940. Up until the Soviet occupation of Latvia in June 1940, Latvia had signed a number of trade agreements with Germany. The absorption of Latvia (and the other Baltic States) by the Soviet Union has been seen as one of the triggers for "Operation Barbarossa".

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EVALUATION OF EXTERNAL FACTORS FOR THE DEVELOPMENT OF THE LATVIAN HEALTH SECTOR

Daiga Behmane
Mg. oec.

Anita Villeruša
Dr. med.

Uldis Berķis
Dr. oec.

Didzis Rūtītis
Dr. admin.

Abstract

The aim of the study is to determine the potential priorities for policy objectives and investment areas to improve the external environment of the health sector from the perspective of increasing the health service export capacity in Latvia. The health sector is relevant for internationalisation because of the permanently increasing demand in the course of cross-border health service provision, patient mobility and cross-border technological progress. Stable increase in exports of health services in Latvia is observed and the potential priorities for policy objectives and investment conditions need to be highlighted. The study evaluates external political, economic, social and technological factors relevant for the development of Latvian health care sector by applying the PEST analysis framework. The authors based on the analysis of literature and international studies derived PEST factors reflecting the external dimension of health sector taking into account the conceptual approach of increasing the competitiveness of the National Health Service providers. The rating of the PEST components was done by the expert method and by applying structured interviews for data collection. Experts were asked to rate the PEST factors from two aspects – *significance* and *performance*, by application the Likert scale (from 0 to 5). Experts ($n = 20$) represent the management of health care providers active in-service provision for international customers. The study reveals that national economic and technological environment factors have the greatest significance in the health sector business environment development, ranked 4.36 and 4.35 respectively, followed by social factors (4.23) and political factors (3.97). A stable economic environment is emerging as a major development condition reflecting the current situation in Latvia. As for the performance ranking, the lowest rate is assigned to political factor group (2.18) and particularly to the factors – long-term sector strategy, the government's timing and change, transparent sector legislation, public administration capacity

and sector employment policy. The low ranking of political factors' performance highlights the challenges of the health sector business environment political spectrum. The study confirms the technological advances of the sector, but also recognises that there are opportunities and space for increasing competition and room for the introduction of competing technologies in the Latvian health care market. The Latvian case justifies that the health sector is subject to substantial external imbalance and advantages of particular sector growth largely depend on the maturity of the external environment.

Keywords: Latvia, health care sector, competitiveness, external factors, PEST analysis

Introduction

The healthcare industry occupies an important place in the context of modern socioeconomic processes, globalisation and technological progress worldwide. Competitiveness of national health care providers can be characterised by their capacity to provide services to foreign patients thus revealing the capacity and attractiveness of the sector. The role of the competitiveness of the health system is challenged by the dual nature of its objectives, namely, health care as part of the national social protection system and health care as a dynamic, highly skilled workforce, technology and scientific potential driven economic sector. Increasing demand for health services due to population ageing and technological progress, as well as the citizens' mobility and demand for social convergence determine the growing proportion of health care in national economies and potentially creates new segments of the health care international market. The health care sector is specific, but also very relevant for internationalisation because of permanently increasing demand in the course of cross-border health service provision, patient mobility and cross-border technological progress.

Exports of healthcare services in Latvia are increasing steadily. Although in absolute terms being still a small (around EUR 2 million) proportion of the market, a stable increase is observed in the number of foreign patients. According to data collected by the alliance of 16 leading clinics "Baltic Care", more than 10 000 foreign patients have received treatment in Latvia in 2016, which is 16.6 times more compared to 2011.

Medical export strategies are considerably affected by the global technological progress, but inside the EU increasingly by country's efficiency of public administration, economic and social factors, business environment and political agenda. According to the latest Global Competitiveness Index (2017/2018) Latvia ranks 54th and the main factors negatively influencing the country's competitiveness are inefficient government bureaucracy, tax regulation, corruption and insufficiently skilled workforce.

The aim of the study is to determine the potential priorities for policy objectives and investment areas to improve the external environment and performance of the health sector from the perspective of increasing the opportunity to provide medical service exports in Latvia.

Methodology of Research

The study evaluates external factors affecting the development of Latvian health care industry by applying the PEST analysis framework. Authors based on the analysis of literature, including the EC, WHO, WB, OECD, WEF publications and studies, derived PEST factors reflecting the external dimension of health sector

The rating of the PEST components was done by expert method and by applying structured interviews for data collection. Twenty experts representing ambulatory and hospital care from institutions of different ownership form (state, municipality and private) were identified from the "Registry of Medical institutions offering treatment services to foreign patients" run by the Health Inspectorate of Latvia. To compare the actual performance of the factor with the desired result, experts were asked to rank the PEST factors according to two aspects: (1) significance of the factor and (2) actual performance of the factor, both by application the Likert scale (from 0 to5). Significance and performance indicators for each of the factors were calculated and by further application of the GAP analysis, the performance level of each factor was calculated.

Background: The importance of external factors in the functioning of the health system

Organisation studies highlight the importance of understanding the wider meso- and macroeconomic environment in which organisations operate. Strategic analysis involves scanning a general or macroeconomic environment to identify and understand broader long-term trends and influences on business.

The importance of external factors for the development of health sector and health outcomes is highlighted in strategic documents of the European Commission, the World Health Organization and other international institutions.

Various research carried out confirms the importance of external factors in relation to successful operation of the health sector service providers to deliver efficient and high-quality health services and encourage economies to maximize their comparative advantage in productivity. As recognised

by Lunt et al (2014)[1], the medical tourist industry is dynamic and volatile and a range of factors including the economic climate, domestic policy changes, advertising practices, geo-political shifts, and innovative and pioneering forms of treatment may all contribute towards shifts in patterns of consumption and production of domestic and overseas health services.

Studies demonstrate that external factors affect and define the parameters for micro-level activities. National government policies tend to be developed in isolation and are disconnected to micro-level capacity to meet patient preferences. The macro–micro integration of governance efforts is a critical issue in both high-income states, where medical institutions attempt to deploy substantial realignment efforts, and developing nations, which are lagging behind due to leadership weaknesses and lower levels of governmental investment (Bodolica et al., 2016).[2]

The framework model developed by the Irish National Competitiveness Council to analyse national competitiveness consists of three levels: (1) policy inputs; essential conditions for business competition, including productivity, process and costs, and labour supply; (3) sustainable growth at the top as an ultimate policy objective. It is acknowledged that specific national economic circumstances of the economy, such as the size of the market, import/ export capacity and presence of multinational firms play significant role in the set of metrics to be covered (Ketels, 2016)[3].

Selection of PEST factors

As suggested by the OECD, economic development reform in Latvia should include health system reforms targeted at governance reforms for state-owned enterprises, productivity increase, transparent investment policy, human resource and infrastructure accessibility and cost efficiency (OECD, 2016)[4].

Political factors are linked to the impact and opportunities provided by government attitudes towards the industry, changes in political institutions and the direction of political processes, legal issues and the general legislative environment.

The European policy for health and well-being *Health 2020* highlights that real improvements in health can be achieved through better governance, broad-based political and cultural support[5]. It is recognised

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[1] Lunt, Smith, Exworthy, Green, Horsfall, Mannion (2014), OECD.

[2] Bodolica, Spragon, *Tofan* (2016), Vol. 19, Issue 4; pp. 790–804.

[3] *Ketels (2016), Review of Competitiveness Frameworks.*

[4] OECD. (2016), Vol. 2016, Issue 1.

[5] World Health Organization (2018a).

that for the achievement of the strategic goals of *Health2020*, innovative new models of governance are required.

Political will, particularly in the form of high-level political support, was cited as the most important factor for the successful implementation of health policy in the recent study on evidence from practice in the process of the implementation of *Health 2020* (WHO, 2018)[6].

The health sector in Latvia has been affected substantially by fiscal and structural reforms due to recent economic crisis, which led to political rather than economically sound decisions[7].

Whereas health remains largely a national matter, national health systems are being substantially shaped by the EU agenda. In future, the role of harmonized instruments to secure the social convergence in social outcomes of EU citizens will substantially increase[8].

A study on Australian public health policy development has identified that the most influential stakeholder groups, acting as both barriers and facilitators, are the Minister and government, lawyers and other stakeholders, such as trade unions and employer groups (Zardo et al., 2014)[9].

Economic factors relate to the economic structures of the society, the country's economic policy and capacity, tax and investment policies. Macro level refers to the financial capacity of health sector. Budgetary constraints affect the sector's production capacity directly. Financial stability of the economy is critical to provide capital for investments and to shift health risks among individuals and society.

As preconditions for achieving efficiency and affordability under regulated competition in health care, are suggested factors arising from the external environment, such as risk-bearing buyers and sellers, contestable markets, freedom to contract and integrate, effective competition regulation, effective quality supervision. It is emphasised that there ought to be no necessary barriers to enter or exit the market. Government subsidies for public hospitals or financial support to failing hospitals reduce the competitive advantage of efficient firms (Van den Ven et al., 2013)[10].

Government regulations have economic consequences. Not always the costs of the implementation of regulations and doing business are considered. As suggested by the World Bank's Doing Business ranking,

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[6] World Health Organization (2018b).

[7] Taube, Mitenbergs, Sagan (2014).

[8] European Commission (2017), Reflection Paper on the Social Dimension of Europe.

[9] Zardo, Collie, Livingstone (2014), pp. 120–127.

[10] Van den Ven, Beck, Buchner, Schokkaert, Schut, Shmueli, Wasem (2013), pp. 226–245.

efficiency of the regulation process has to be considered. The health sector along with the need for substantial investments is sensitive to the costs caused by specific public regulations.

It is recognised that improvements in health system outcomes are stimulated by not only the total expenditure on health and a lower financial burden on patients, but primarily are determined by the broader economic context of the country (Romaniuk, Szromek, 2016)[11]. The JEL (*Journal of Economic Literature)* classification suggests to classify economic factors that influence health in categories, such as market regulation, institutions, supply of money, finance and loans, the balance between the public, private and third sector, labour, production and consumption and approaches to the economy (Naik et al, 2017).

Production factors play significant role for the development of economies. Several studies conclude that human resources is critical in providing high quality of health care and achieve better outcomes (Kabene et al, 2006)[12], (Dubois et al, 2006)[13]. By considering the negative tendencies of demography and migration in Latvia, the issue of labour supply and productivity becomes crucial for the health care industry. Until now, improvement of Latvian competitiveness was determined by reducing labour costs. To maintain the advantages of low cost labour in long term will not be possible under conditions of labour market liberalization and international mobility of the workforce (Mavlutova, Titova, 2013).[14]

Social factors are connected with shared values, cultural attitudes, ethical beliefs, demographics, educational levels, etc. Observing social factors helps organisations maintain their relevance and attractiveness in the eyes of citizens and society as a whole.

Management models are to be found that allow the implementation of principles and values protected in the society such as accountability and responsiveness in accordance with communities' interests (Rechel et al, 2009)[15].

The term accountability refers to the need to make decision process in healthcare visible and transparent. Democratic accountability refers to the process by which the healthcare institutions from Government to individual providers account to society. The different accountability levels

[11] Romaniuk, Szromek (2016), pp. 16–95.

[12] Kabene, Orchad, Howard, Soriano, Leduc (2006).

[13] Dubois, McKee, Nolte, (2006).

[14] Mavlutova, Titova, (2013), pp. 1063–1072

[15] Rechel, Wright, Edwards, Dowdeswell, McKee (2009).

are related to the different types of society's participation in democratic process (Nunes et al, 2011)[16].

Technological factors are linked to changes in technology that can change the provider's competitive position, improvement of current products and process innovations that can reduce production costs. Management innovation is part of the technological progress.

As recognised, technology drives healthcare more than any other force, and in the future, it will continue to develop in dramatic ways (Thimbleby, 2013)[17].

Technological advance in health care relate to the progress in medical technologies, the ways of service production, readiness of support and communication systems, as well as a company's ability to operate in the global medical knowledge exchange environment. Health care organisations usually compete for prestige equipment, even if not always economically justified.

Technological progress is assumed to boost health care costs, but studies suggest that the relationship between medical technology and spending is complex and often conflicting, especially if additional benefits resulting from the use of the technology, such as effective, cost-effective, and higher quality health care, justify increase in costs (Sorenson et al, 2013)[18].

The summary of external factors relevant to health care sector is depicted in Table 1.

Taking into account that Latvia's public expenditure on health is very low, at 5.5% of GDP, and only 8.8% of public expenditure is spent on health, compared to 15.1% across OECD countries[19], private health care is well underway. This explains that there is room for the development of private healthcare provision and consequently private providers are active in attracting external patients to secure business profitability.

[16] Nunes, Brandao, Rego (2011), pp. 352–364

[17] Thimbleby (2013). Vol. 2, No 3, e*28*.

[18] Sorenson, Drummond, Bhuiyan Khan (2013). pp. 223–234.

[19] OECD. (2017).

Table 1. External factors relevant to the health sector PEST analysis

POLITICAL FACTORS		ECONOMIC FACTORS	
1.1	Comprehensive and transparent sector legislation	2.1	Stable home economy trends
1.2	International legislation	2.2	Competition between service providers
1.3	Public administration capacity	2.3	Encouraging state investment policy
1.4	Capacity of regulatory bodies	2.4	Supportive tax policy
1.5	Existence of long-term sector strategy	2.5	Consumer purchasing power
1.6	Government term and change	2.6	Sustainable financing mechanism
1.7	Sector employment policies	2.7	Labor productivity, supply and costs
SOCIAL FACTORS		**TECHNOLOGICAL FACTORS**	
3.1	Lifestyle trends	4.1	Technological progress
3.2	Demographics (age, growth)	4.2	Threats from competing technology
3.3	Population adherence to health system	4.3	Innovation in service provision
3.4	Informed and demanding customers	4.4	Research funding by government
3.5	Accountable advertising and publicity	4.5	Available ICT support and data exchange systems
3.6	Consumer buying patterns	4.6	High standards for the protected health information
3.7	Employment patterns, attitude to work	4.7	International knowledge transfer

Source: Developed by authors.

As for the care level, according to the alliance “Baltic Care” information mostly foreign patients are interested in receiving short-term care, which is provided in ambulatory setting. Therefore, health care export services in Latvia are provided mainly by private health care institutions and in ambulatory setting, which is reflected in the structure of experts represented in the study (see Table 2).

Table 2. Expert characteristics by represented care level and institution's ownership form (n = 20)

Care level	
ambulatory care	14
hospital care	6
Ownership	
state	3
municipality	5
private	12

Source: Developed by authors.

Results and discussion

Evaluation of POLITICAL factors

In the group of political factors (see Table 3), the highest importance is assigned to the creation of an environment for the introduction of international requirements for the health sector, factor *international legislation* (4.45), thus pointing to the growing impact of international regulation and practice on health system operation on national level. *Long-term sector strategy* and *sector employment policy* (ranked 4.3 and 4.25) are mentioned as next most important external factors affecting sustainable health sector growth.

Table 3. Expert-assigned mean values for POLITICAL factors

1	POLITICAL FACTORS	Significance (0–5)	Performance (0–5)	Performance, %
1.1	Comprehensive and transparent legislation	4.2	2.2	52.38
1.2	International legislation	4.45	2.4	53.93
1.3	Public administration capacity	3.45	2.2	63.77
1.4	Capacity of regulatory bodies	3.55	2.5	70.42
1.5	Long-term sector strategy	4.3	1.75	40.70
1.6	Government term and change	3.6	2	55.56
1.7	Sector employment policies	4.25	2.2	51.76
	Mean value	3.97	2.18	54.86

The lowest performance level is assigned to the factor *long-term sector strategy* (1.75) comprising only 40.70% from the expected score, which reveals that health sector stakeholders have low awareness of long-term sectoral policy and is considered as major external threat for the development. Next lowest rank in performance is given to the government's timing and change (2.0), which reflects that frequent changes in Latvian government and the subsequent frequent changes in sectoral policy are significant obstacles for the sector growth. Further factors hindering the development of the sector are mentioned: transparent sector legislation (2.2.), public administration capacity (2.2) and sector employment policy (2.2.).

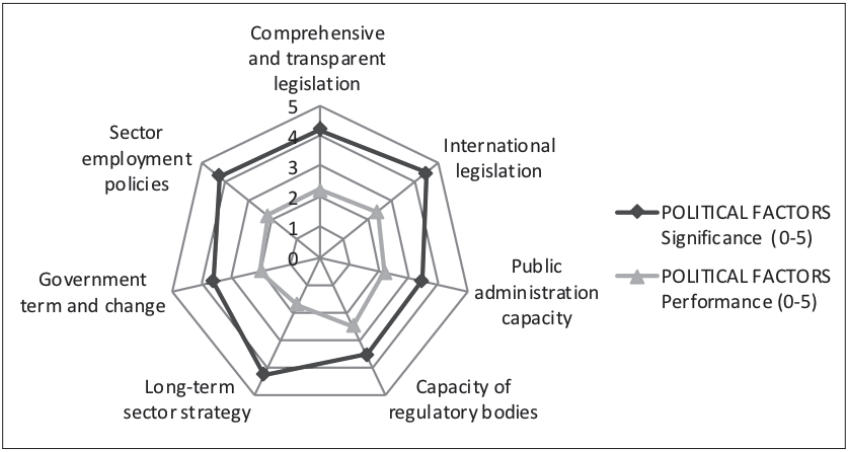

Figure 1. Significance and performance of POLITICAL factors (0–5, Likert scale)

Although the overall importance of the Political factor group is rated at the level of 3.97, which is slightly lower than other factor groups, the performance of the group is rated considerably lower than the rest of the groups (54.86%), which is threatening for sustainable business environment.

Evaluation of ECONOMIC factors

Economic factors (see Table 4) are ranked as the most significant factor group (mean value of the group – 4.36) with the highest ranking for *consumer purchasing power* (4.8), followed by *labour productivity, supply and costs* (4.65) and *sustainable financing mechanisms* (4.55).

Table 4. Expert-assigned mean values for ECONOMIC factors

2	ECONOMIC FACTORS	Significance (0–5)	Performance (0–5)	Performance, %
2.1	Stable home economy trends	4.3	2.8	65.12
2.2	Competition between service providers	4.1	3.65	89.02
2.3	Encouraging state investment policy	4.1	1.9	46.34
2.4	Supportive tax policy	4	2	50.00
2.5	Consumer purchasing power	4.8	2.95	61.46
2.6	Sustainable financing mechanism	4.55	1.95	42.86
2.7	Labor productivity, supply and costs	4.65	3.1	66.67
	Mean value	4.36	2.62	60.16

In the performance dimension least evaluated are factors: *encouraging state investment policy* (1.9), *sustainable financing mechanisms* (1.95) and *supportive tax policy* (2). At the same time, the performance of indicator *labour productivity, supply and costs* is scored higher (3.1) than the reported situation in Latvia in general, which can be explained by the composition of the surveyed, the majority representing private health care providers, for whom the retention of workforce is not so an acute problem as for public institutions.

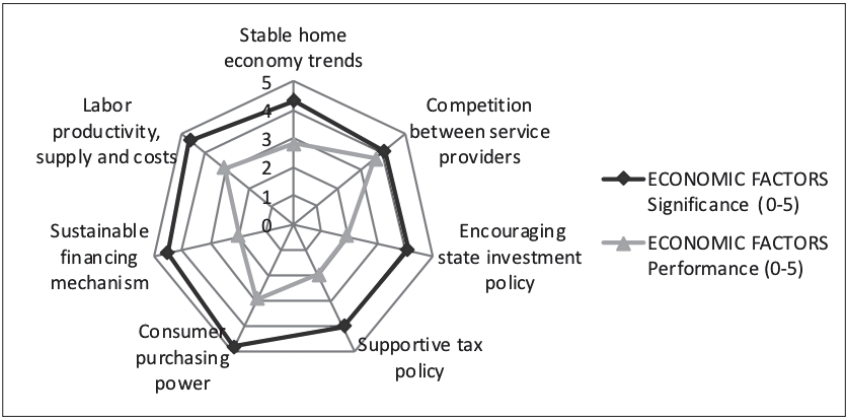

Figure 2. Significance and performance of ECONOMIC factors (0–5, Likert scale)

The biggest gap between the significance and performance is attributed to the indicators *sustainable financing mechanisms* (42.86%), *encouraging state investment policy* (46.34%) followed by *supportive tax policy* (50.00%). Thus showing the system's dependence on sustainable financial security.

Evaluation of SOCIAL factors

Overall the experts have evaluated the importance of social factors (see Table 5) slightly lower (4.23) than economic and technological factors. The highest rank in social factor group is attributed to *accountable advertising and publicity* (4.5) highlighting the importance of accountable communication and public relation tools in health sector development.

Table 5. Expert-assigned mean values for SOCIAL factors

3	SOCIAL FACTORS	Significance (0–5)	Performance (0–5)	Performance, %
3.1	Lifestyle trends	4	3	75.00
3.2	Demographics (age, growth)	4	3.1	77.50
3.3	Population adherence to health system	4.35	2.95	67.82
3.4	Informed and demanding customers	4.45	3.15	70.79
3.5	Accountable advertising and publicity	4.5	3	66.67
3.6	Consumer buying patterns	3.9	3.05	78.21
3.7	Employment patterns, attitude to work	4.4	2.9	65.91
	Mean value	4.23	3.02	71.45

The factor *informed and demanding customers* (4.45) is considered to be a significant factor in health service provision thus emphasising the emerging trend of patient centred health care and the importance of patient compliance. *Employment patterns and attitude to work* (4.4.) tend to form the social environment of the employment and customer relationship being valued highly in the health sector.

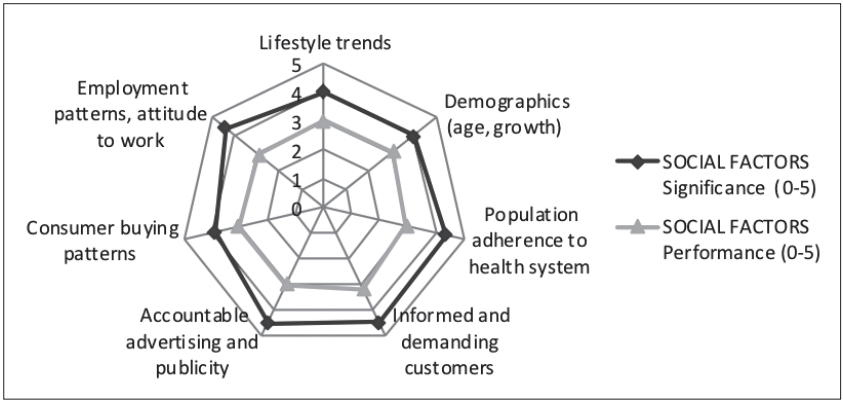

Figure 3. Significance and performance of SOCIAL factors (0–5, Likert scale)

In the social factor group, overall performance rating is higher (71.45%) than in other factor groups highlighting that social factors are posing a lower threat to the development of the health sector than political, economic and technological factors.

Evaluation of TECHNOLOGICAL factors

The expert evaluations (see Table 6) indicate that technological advancement of the sector is of paramount importance for ensuring a competitive edge. *Technological progress* itself is ranked as most important technological factor (4.8) among all, followed by *ICT support* (4.6), *international knowledge transfer* (4.55) and *innovation in service provision* (4.5). Somewhat lagging behind is the ranking of the significance factor – *threats from competing technology* (3.95) characterising the modest competition level between health care providers. Performance of the *technological progress* is ranked high (3.85) meaning that the provision of health care services is ensured by high technological support in Latvia. In the performance dimension the lowest ranks are attributed to *available research funding* (1.65) and implementation of *high standards for health information* provision and *ICT support*, thus depicting the potential areas for improvement in technological area – the need for a comprehensive research strategy supported and evidence-based selection of technologies applied, including information exchange platforms, e-health system and other ICT tools.

Table 6. Expert-assigned mean values for TECHNOLOGICAL factors

4	TECHNOLOGICAL FACTORS	Significance (0–5)	Performance (0–5)	Performance, %
4.1	Technological progress	4.8	3.85	80.21
4.2	Threats from competing technology	3.95	2.85	72.15
4.3	Innovation in service provision	4.5	3.4	75.56
4.4	Research funding by government	3.9	1.65	42.31
4.5	ICT support	4.6	2.8	60.87
4.6	High standards for health information	4.15	2.35	56.63
4.7	International knowledge transfer	4.55	3.1	68.13
	Mean value	4.35	2.86	65.68

The gap analysis for technological factors reveals that health care organisations depend on the overall research environment in the industry and the growth strategies should be based on evidence and research-based assumptions.

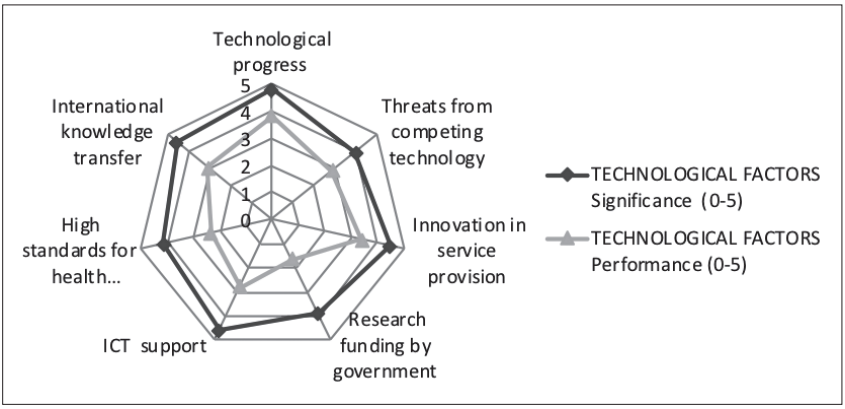

Figure 4. Significance and performance of TECHNOLOGICAL factors (0–5, Likert scale)

The health care managers also attribute the slow introduction of national e-health system as a threat to the competitive environment accompanied by the need for overall surveillance of high standards for health information.

The results of external factor evaluation by experts reveals that national economic and technological environment factors have the greatest significance in the health sector development, ranked 4.36 and 4.35 respectively, followed by social factors (4.23) and political factors (3.97). In relation to the actual performance of external factors, the performance of political factors has been assessed to be the lowest (2.81), but the most relevant – the compliance of social factors (3.02).

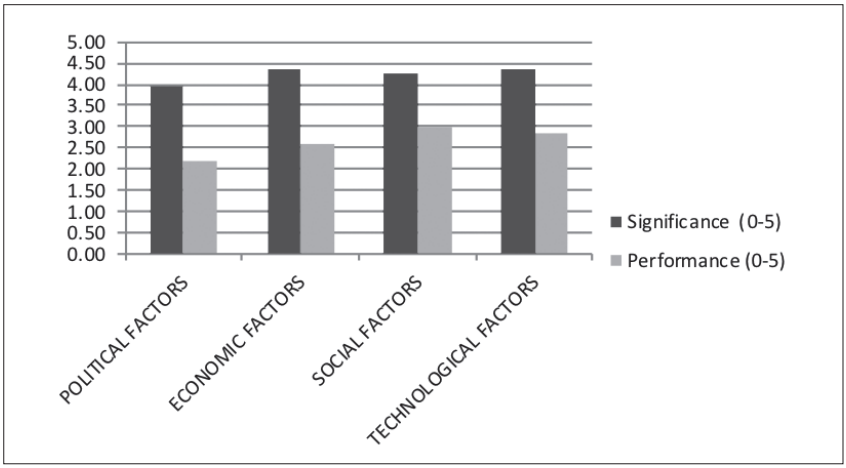

Figure 5. Significance and performance of PEST factor groups (0–5, Likert scale)

The difference between the attributed significance and real performance of the factor reveals (see Table 7) that political factors have the biggest gap in real performance, estimated only at 54.86% level, followed by economic factors (60.16 %), technological factors (71.45%) and social factors (71.45%).

Table 7. Performance of the PEST factor groups as % from the mean significance values, the GAP analysis

	Performance of the PEST group as % of the significance values
POLITICAL FACTORS	54.86
ECONOMIC FACTORS	60.16
SOCIAL FACTORS	71.45
TECHNOLOGICAL FACTORS	65.68

To determine the greatest threats to the development of the sector and the resulting health policy priorities, the factors were grouped (see Figure 6) according to the ranked performance indicators. Performance ranked as 4 and 5 is considered as good, 2, 5–3 – as moderate and 1 and 2 – as poor.

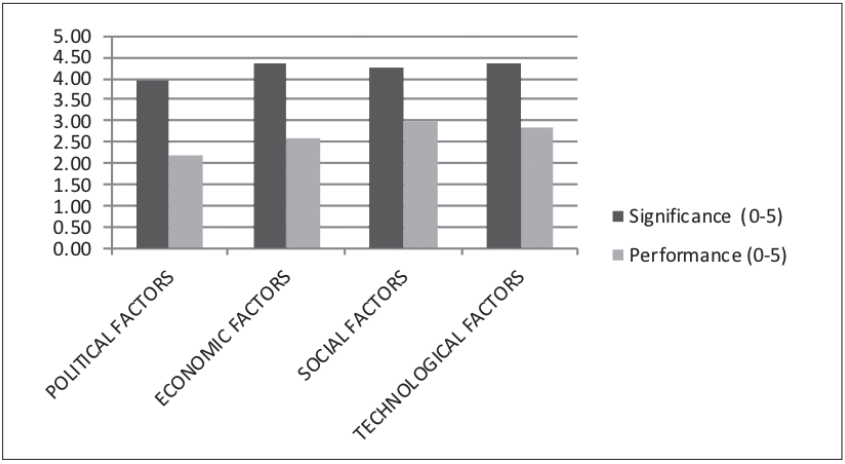

Figure 6. Significance and performance of the PEST factor groups (Likert scale 0–5)

The assessment has identified that the main external threats to the sustainable development of the health sector in Latvia are (factors with a poor performance rated by 2 or below): lack of long-term sector strategy (1.75), government term and change (2.0), vague state investment policy (1.9), lack of sustainable financing mechanism (1.95), lack of supportive tax policy (2.0) and low research funding by government (1.65).

Conclusions

The PEST analysis adds value to the evaluation of the external environment of the health sector in Latvia. The study shows that the success of health care organisations' development is significantly dependent on the external political, economic and technological, but slightly less – from the social environment factors. Sustainability of the PEST-defined environment is crucial for investment decisions indicating that without facilitating economic conditions and clear political direction, investments may also be inappropriate for long-term strategic sector development.

International requirements also have a considerable impact on the future development of national health systems.

The study justifies technological advances of the sector, but also recognises that there are opportunities and space for increasing competition and room for the introduction of competing technologies in the Latvian health care market.

The Latvian case justifies that health sector is subject to substantial asymmetric external imbalance and available advantages of particular sector growth largely depend on the maturity of the external environment.

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DATA QUALITY SCALE FOR DATA QUALITY ASSESSMENT: METHODOLOGICAL GUIDELINES AND PRACTICAL IMPLEMENTATION

Daina Šķiltere
Dr. oec.

Svetlana Jesiļevska
Dr. oec.

Abstract

In this article, the complex methodology for the entire data quality treatment – the *Data Quality Scale (DQS)* is proposed. The *Data Quality Scale (DQS)* is developed by Dr. oec. Svetlana Jesiļevska and Dr. oec. Daina Šķiltere. The *Data Quality Scale (DQS)* gives an opportunity to identify certain shortcomings of the quality of statistical data and to develop proposals to improve the quality of statistical data. The methodology consists of data quality dimensions and its definitions, indicators for assessment of data quality dimensions and experts' evaluations. The Data Quality Scale has good expansibility and adaptability as makes it possible to evaluate the quality of data at various levels of detail: at indicators' level, at the level of dimensions, to determine the entire quality of data. The research results enrich the theoretical scope of statistical data quality and lay a solid foundation for the future by establishing an assessment approach and studying evaluation algorithms.

Keywords: data quality, data quality dimensions, Data Quality Scale

Introduction

The authors of the Data Quality Scale have a wide experience in data quality assessment and have a profound background regarding data quality. Since 2012, the authors have been dealing with data quality issues. Data quality assessment and improvement are topical issues nowadays; the authors identified a number of problems of statistical data, such as data sources, recent data, regularity, timeliness of data, updating data, time series, data frequency, data comparability, data costs etc. Sometimes, the required data does not exist; data from different sources are not always comparable (Šķiltere and Jesiļevska, 2014). It is therefore of vital importance that a systematic approach is available to assess the quality of statistical data. The problem here is associated with selecting appropriate criteria to evaluate the goodness of statistical data, therefore, not just

related to the research paradigm and intention, but also to the beliefs held by both researchers and research participants (Šķiltere and Jesiļevska, 2014). Based on existing theory, the authors developed a system of quality indicators to be used to determine the quality of statistical data. This systematic approach consists of the following quality characteristics: data completeness, representativity, objectivity, quality of methodology, coherence, accessibility, accuracy of estimates, actuality, interpretability, statistical disclosure control, and optimal use of resources, utility, and informativeness. To some of the proposed data quality dimensions not much attention has been paid previously. The authors conducted an expert's survey to find out the most essential data quality dimensions. The set of data quality dimensions has been tested with experts using four different data usage contexts: data for scientific research, data for decision-making, data for analysis of the progress of a research object during the reporting period, and data for research object modelling and forecasting (Jesiļevska, 2017).

The authors found out that one of the most problematic data quality dimensions is data accuracy. In the scientific literature, many methods have been proposed to identify outliers for empirical distributions, such as Dixon Test, Grubbs Tests, Hampel's Test, Quartile Method, Nalimov Test, Walsh's Test, and Discordance Outlier Test etc. In 2010, Šķiltere D. and Danusēvičs M. developed a method to assess total errors of the truly non−linear trend models (Šķiltere and Danusēvičs, 2010). However, no method was available in the scientific literature for identifying outliers by analysing changes in the indicator under the influence of one or several factors. In 2015, Jesiļevska S. developed the Iterative method for reducing the impact of outlying data points. The Iterative method was awarded the 3rd Prize in the 2015 International Competition the IAOS Prize for Young Statisticians and was published in the Statistical Journal of the IAOS: Journal of the International Association for Official Statistics in 2016 (Jesiļevska, 2016).

Based on the previously developed integrated approach to data quality assessment that consists of 13 data quality dimensions and the assessment indicators for each dimensions, in this article the authors present a complex methodology for the entire data quality treatment – the Data Quality Scale (DQS).

Data quality, data quality dimensions and assessment indicators

Since all types of research must respond to the agreed canons of quality (Marshall and Rossman 2006), one cannot avoid discussing them, despite their philosophical and practical complexity, as well as the difficulty in

defining what quality means or covers. Nowadays there are multiple separate ways to define data quality and there is currently no commonly agreed definition on what data quality is. Different analysts and different agencies provide different answers (Brackstone 1999, Carson 2000, Pipino et al. 2002), but all agree that the quality evaluation is by its nature a multidimensional problem (Madnick S. et al, 2009; Wang R. and Strong D., 1996).

The data quality dimension is a characteristic for classifying data quality requirements. In fact, data quality dimensions provide an opportunity for assessment and control of data quality (Wang R. Y., Ziad M., Lee Y. W., 2001). The data quality literature provides a thorough classification of data quality dimensions; however, there are several discrepancies in the definition of most dimensions due to the contextual nature of quality. The six most important classifications of quality dimensions are provided by several scientists (Wand and Wang, 1996; Wang and Strong, 1996; Redman, 1996; Jarke et al., 1995; Bovee et al., 2001; Naumann, 2002). By analysing these classifications, it is possible to define a basic set of data quality dimensions, including accuracy, completeness, consistency, and timeliness, which constitute the focus of most authors (Catarci and Scannapieco, 2002).

Data quality is multi-dimensional; however, the most frequently mentioned dimensions are accuracy, completeness, consistency and timeliness. The choice of data quality dimensions is based on knowledge, intuitive understanding (Ballou D. P. and Pazer H. L., 1985), experience (Firth C. P. and Wang R. Y., 1996), and findings from scientific literature (Kriebel C. H., 1979). However, scientific research results (Wang R. Y., Storey V. C., Firth C. P., 1995) show that there is no agreement on data quality dimensions.

The scientific literature highlights the significance of systematic, science-based data quality assessment. Scientists indicate that it is important to assess quality within three levels: quality of data collection process, quality of final data and quality of data use. The following data quality dimensions mainly qualitative assessments are provided by researchers: data actuality, optimal use of resources, data interpretability, data coherence, data objectivity, quality of the data collection and processing methodology, data availability, informativeness, and utility. In addition, the methodology for assessment of these data quality dimensions is not fully developed:

- **Data representativeness** – Mainly, quantitative assessment methods, e.g. design effect, effective sample size-neff etc. Indicator – respondence level etc.
- **Data accuracy** – Mainly, quantitative methods for identification of outliers for empirical distribution, e.g., extreme value test, discordance test, Grubb's test, Dixon test etc.

- **Data completeness** – Simple factor method
- **Data actuality** – Data lag, information float, volatility
- **Data coherence** – Mainly, qualitative assessment approach
- **Data interpretability** – Mainly, qualitative assessment approach, e.g., survey of data users
- **Data utility** – Mainly, qualitative assessment approach, e.g., survey of data users
- **Quality of data collection and processing methods** – Mainly, evaluate in the perspective of data quality dimensions
- **Data availability** – Mainly, qualitative assessment approach, e.g., survey of data users
- **Data objectivity** – Not found

Two-tier system of indicators on data quality assessment

The authors developed a two-tier system of indicators for data quality assessment, which includes 13 data quality dimensions:

Data objectivity – *the ability of the initial data* to reflect the actual situation*

1. The compliance of the implementation of the specially organised statistical observation with the scientifically based methodology
2. The compliance of the implementation of the survey (as a method of statistical observation) with the scientifically based methodology
3. The adequacy of the number of questions asked to respondents to obtain the information necessary for data users
4. Providing initial data* stability in time (for example, the respondent's answers are based on opinions, judgments, ideas that are considered true)
5. Ensuring minimization of impact of numerous factors on the respondent's answers in the questionnaire:
   - impact of external events (e.g. political) on the initial data*
   - influence level of mentality (e.g., religion, culture, history, traditions) on the respondents' answers
   - the impact of public opinion on respondents' answers
6. Ensuring equal survey question understanding among statisticians and respondents, the question is asked unambiguously

Data completeness –*sufficiency of the initial data* to meet user needs*

1. Ensuring collection of all the initial data* that are needed to carry out the assessment of the phenomena:
   - in dynamics
   - by objects (industry, regions etc.)

Data representativity – *sample data generalization capabilities*

1. Ensuring sample planning according to the tasks of the statistical research
2. Ensuring sampling planning component – sample size according to the tasks of the statistical research
3. Sufficiency of the survey response rate to fulfil tasks of statistical research
4. Ensuring the minimum number of incorrect answers (e.g. incomplete, illogical, not corresponding to reality) obtained within the survey

Data accuracy – *data meets the factual situation (data are free of error, correct)*

1. Implementation of systematic evaluation and correction for
   - initial data* and interim results
   - mistakes that may occur during the data collection and processing process (sampling errors and non-sample errors)
2. Evaluation of methodology for calculating derivative statistical indicators*****
3. Performing data audits in accordance with internationally recognized and scientifically valid procedures and data audit guidelines
4. Performing data correction in the case of changes in the subject of the study (data correction, recalculation)
5. Clarification of preliminary statistical indicators**** in accordance with well-tested and clearly understandable procedures

Quality of methodology – *scientific justification of methodology (including approbation of methodology), correct use of methodology and unification level of methodology*

1. Regularity in performing:
   - evaluation of the quality of statistical studies
   - supervision and improvement of scientifically sound data collection and processing methodology
   - monitoring and improving the scientifically-based methodology for calculating derivative statistical indicators*****
2. Compliance of the data collection and processing methodology with EU and international criteria
3. Evaluation of the results of the testing of the survey questionnaire before the statistical survey
4. Coherence of the data collected during the data collection and processing with the needs of the main data users (mainly, government institutions)
5. The relevance of data collection and processing processes to the rapidly changing environment

6. Opportunity for the operative implementation of new methods of data collection and processing and / or introduction of methodologies on new indicator calculation
7. Ensuring the level of unification of the data collection and processing methodology
8. Balancing the amount of resources invested in complex indicators (such as the European Innovation Scoreboard) with the utility of these complex indicators

Data coherence – *logical links between different statistical surveys' results, the data from various sources are comparable*

1. Coherence of methodology (definitions, classifications, methods) between statistical domains (different economic and social spheres, etc.)
2. Use of micro-data from one survey to improve the quality of another survey
3. Compliance of trends of correlating indicators within different statistical surveys
4. Collaboration with database maintainers to ensure data quality

Data actuality – *speed and frequency of renewal of data collection and processing*

1. Systematicity of monitoring of statistical data topicality and practical utility
2. Timeliness of the timing and the publication of statistical data, considering of the timing of publication of statistical indicators****
3. The relevance and adequacy of statistical data to needs of data users
4. Systematicity of statistical data renewal
5. The possibilities for reducing the period between the end of the reporting period and the publication of provisional*** / final data
6. Reduction of the period in the dynamics between the end of the reporting period and the publication of provisional*** / final data in comparison with the previous statistical surveys

Data accessibility – *simplicity of data availability to the users*

1. Providing access to statistical data for various categories of data users, respecting confidentiality requirements
2. The application of strict confidentiality requirements to external data users who have access to microdata** for research purposes
3. Implementation of a multitude ways of data dissemination: printed, files, CD-ROMs, Internet databases, etc.
4. Quality indicators are available for data users according to the European Statistics quality criteria

Data interpretability – *statistical data collection and processing methodology is available to the data users to make the correct interpretation of data*

1. Providing access to data collection and processing methodology for data users
2. Providing access for data users to definitions, calculation methodology, classifications etc. on socio-economic etc. indicators
3. Providing access for data users to interpretation of dynamic statistical indicators***** (e.g., growth rate, etc.)
4. Schematic presentation of components of complex indicators that enables data users to understand the nature of the indicator

Data informativeness –*data presentation form that enables data users to capture data quickly and easily navigate the data range*

1. Providing the possibility for data users to make an analysis of the data
2. Providing the possibility to create data tables online using interactive databases
3. Providing the possibility for data representation in interactive maps (selecting different territorial cuts of the country, only a specific part of the national territory, displaying data in comparison with other countries, etc.)
4. Ensuring possibilities of using interactive databases for creating tables online

Data utility – *data users' demand to the data*

1. Ensuring the possibility to use data:
   - for different purposes (for decision-making, research, forecasts, etc.)
   - by different users' categories (government, researchers, organizations, media etc.)
2. Systematicity of conducting analysis of data users' demand for data
3. Level of data users' satisfaction

Statistical disclosure control – *confidentiality of the information provided by respondents*

1. Ensuring of statistical confidentiality is stated in the law
2. Ensuring availability of the confidentiality policy to the public
3. Implementation of physical, technical and organizational measures in the statistical office to ensure the security of statistical databases

Optimal use of resources – *efficient use of existing resources for data collection and processing*

1. Ensuring a maximum use of potential of productivity of information and communication technologies during data collection, processing and dissemination

2. Performing various measures to improve the potential of administrative data for statistical purposes and to avoid direct surveys
3. Implementation of standardized solutions that improve the efficiency and productivity of resources used
4. Analysis and control of the amount of resources used (time, work, finances, etc.) in the process of collecting and processing data

* ***Initial data*** *– original raw data collected during the statistical study (statistical observation or survey).*

** ***Microdata*** *– tested and specified initial data used for the calculation of the preliminary and final data.*

*** ***Provisional data values*** *– data that require further clarification.*

**** ***Statistical indicators*** *– quantitative characteristics of changes of the phenomenon or object.*

***** ***Derivative statistical indicators*** *– are the quantitative and qualitative characteristics of a phenomenon or group of objects (for example, absolute aggregates, growth rate, average, proportion, etc.) based on a scientifically valid calculation method.*

The data quality dimensions proposed by the authors are essential during every stage of producing statistical data, ensuring systemic approach towards data quality assessment:

1. **Stage. Evaluation of the need for data** – Optimal use of resources
2. **Stage. Statistical data production process planning and development** – Quality of methodology, coherence of methodology, optimal use of resources
3. **Stage. Data collection** – Quality of methodology, coherence of data and methodology, accuracy, representativity, objectivity, actuality, statistical disclosure control, optimal use of resources
4. **Stage. Data processing** – Quality of methodology, coherence of data and methodology, accuracy, representativity, actuality, statistical disclosure control, optimal use of resources
5. **Stage. Data analysis** – Quality of methodology, coherence of data and methodology, accuracy, actuality, optimal use of resources
6. **Stage. Data dissemination** – Accessibility, informativeness, interpretability, utility, completeness, actuality, statistical disclosure control, optimal use of resources
7. **Stage. Data archiving** – Quality of methodology, coherence of data and methodology, statistical disclosure control, optimal use of resources, and
8. **Stage. Statistical data collection process evaluation** – Optimal use of resources

During the research, in cooperation with the Central statistical bureau of Latvia an expert survey of highly qualified specialists responsible for collection, processing and analysis of statistical information was carried out. In the experts' survey participated 19 experts from National statistical offices

representing the following countries: *Belgium, Armenia, Cyprus, Finland, Iceland, Czech Republic, Malta, Bulgaria, Romania, Slovak Republic, Ukraine, Lithuania, Belarus, Azerbaijan* and *Latvia*. The authors asked the experts to estimate the optimal level of significance of each data quality indicator in % corresponding to the theoretical guidelines of statistical science according to the following scale 0%→70%, 70%→90%, 90%→100%, 100%. For the multidimensional case, the authors propose to evaluate independently each indicator for assessment of data quality dimensions. Based on indicators' from the expert assessments the authors calculated the Dimension mean:

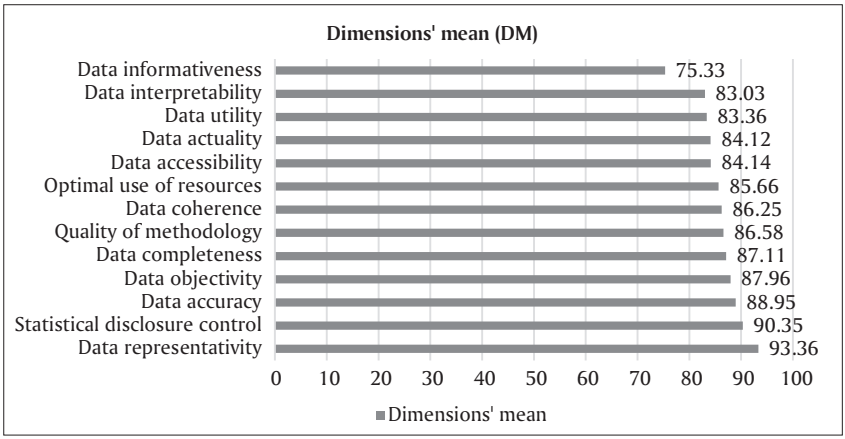

Figure 1. Data quality dimensions' mean (DM) and range according to the experts' evaluations

Source: prepared by the authors

In the experts'-statisticians view five the most important data quality dimensions are data representativity, statistical disclosure control, data accuracy, data objectivity and data completeness (see Figure 1).

In 2016, the authors conducted an expert survey in which both statisticians and data users were involved. Interesting to mention that the most significant differences in the answers of statisticians and users were identified in the context of data used for analysis the progress of research object during the reporting period. Statisticians consider quality of methodology as the most important dimension; data users argue that the most essential dimension is completeness. Data users put quality of methodology on the bottom of the list and believe that quality of methodology, accessibility and interpretability are equally less important dimensions (Jesiļevska S., 2017).

Data Quality Scale

The proposed method Data Quality Scale makes it possible to evaluate the quality of data at various levels of detail: at indicators, at the level of dimensions, and to determine the overall quality of data.

One key challenge is to determine what level of data quality is acceptable (or "good enough"). Based on indicators' expert assessments we calculated the Dimension mean and determined limit values for low, average and high-quality data (see Table 1 and Figure 2).

Table 1. Data Quality Scale. Limit values for data quality treatment according to the experts' evaluations

Dimensions	Limit values		
	For low quality data	For average quality data	For high quality data
Data objectivity	less than 67%	67% – 84%	84% – 100%
Data completeness	less than 64%	64% – 87%	87% – 100%
Data representativity	less than 77%	77% – 90%	90% – 100%
Data accuracy	less than 68%	68% – 87%	87% – 100%
Quality of methodology	less than 70%	70% – 80%	80% – 100%
Data coherence	less than 63%	63% – 84%	84% – 100%
Data actuality	less than 67%	67% – 79%	79% – 100%
Data accessibility	less than 54%	54% – 80%	80% – 100%
Data interpretability	less than 51%	51% – 79%	79% – 100%
Data informativeness	less than 58%	58% – 68%	68% – 100%
Data utility	less than 57%	57% – 77%	77% – 100%
Statistical disclosure control	less than 59%	59% – 84%	84% – 100%
Optimal use of resources	less than 66%	66% – 78%	78% – 100%
Total Data Quality Value	**81%** → 100%		

Source: prepared by the authors

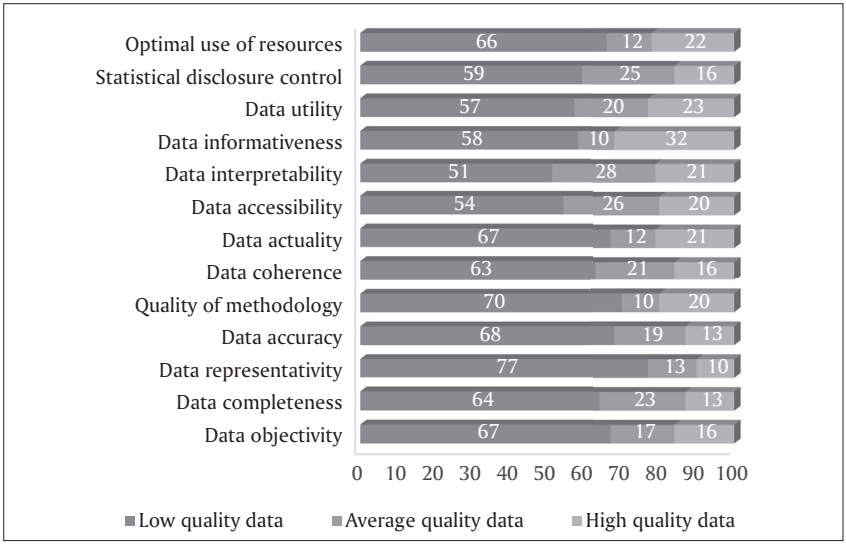

Figure 2. Data Quality Scale. Limit values for data quality treatment
Source: prepared by the authors

Low quality data is a problem for decision-making both in the country and companies' level, statistical data of low quality represent a significant cost factor for many companies, which is supported by findings from several surveys from industrial experts (Marsh, 2005). Kim and Choi (2003) who state, "There have been limited efforts to systematically understand the effects of low quality data. The efforts have been directed to investigating the effects of data errors on computer-based models such as neural networks, linear regression models, rule-based systems, etc." and "In practice, low quality data can bring monetary damages to an organization in a variety of ways". According to Kim (2002), the types of damage that low quality data can cause depend on the nature of data, the purpose of the use of data, the types of responses to the damages, etc. As a result, it is significant to identify data quality dimensions of low quality and to develop the ways in which these weaknesses could be improved.

The following main phases characterise the methodology:

1. data quality assessment on the level of the data quality indicators for a certain statistical data according to the following scale 0%→70%, 70%→90%, 90% 100%, 100%;
2. calculation of the Dimension mean and evaluation of the entire data quality level;
3. comparison with the optimal data quality level values (see Table 1),

4. identification of the shortcomings during the process of data collection on the level of data quality indicators,
5. validation and processing based on the assessment of the data quality indicators, and
6. choice of the optimal data quality improvement process.

Conclusions

The Data Quality Scale and the methodology can be used by the statisticians to understand the statistical data quality assessment and the various quality exchanges inside it. The authors are convinced that the Data Quality Scale will help statisticians to determine shortcomings of the data, to improve data quality significantly to improve the process of decision-making based on statistical data.

Having at his or her disposal a methodology of evaluating not only at the data quality dimensions' level, but also the entire statistical data quality, makes possible to use the Data Quality Scale for data form different areas of industry, to make data assessment on dynamics with the purpose to realise the progress in data quality, and to find out systematic failures of data collection, processing, validation etc.

To solve data quality problems effectively, both data users and data producers must use sufficient knowledge about solving data quality problems appropriate for their process areas. At minimum, statisticians must know what kind of data, how (this question includes mainly methodological issues), and why to collect the data; data users must know what data, how (what kind of analysis), and why (intended purpose) to use the data. In sum, the two main actors mentioned above have roles in a data production process and should cooperate closely to improve statistical data quality. Involvement of both statisticians and data users in the process of identifying and solving possible drawbacks of data opens new avenues for future research and practice.

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ERGONOMIC RISKS INFLUENCE ON WORKER'S WORK ABILITY AT METAL MANUFACTURING ORGANISATIONS

Kristīne Bokše
Mg. sc. soc.

Henrijs Kaļķis
Dr. sc. admin.

Ženija Roja
Dr. med.

Abstract

Manufacturing is one of the growing economy sectors in Latvia and the number of employees who are exposed to work environment risk, especially ergonomic risk, increases. Physical overload at work influences work abilities that can have negative effect on employee`s health and work task performance. The aim of the research was to find out ergonomic risk influence on workers work ability at manufacturing organisations in Latvia. In the research such methods as the checklist method as a questionnaire, Key Indicator Method for analysing ergonomics risks and work ability index determination were applied. Research results show that employees at metal manufacturing organisations mainly complain about overload at the workplaces, ergonomic risk-related health problems, but at the same time indicate their work abilities are good or excellent. Only those who have longer work experience have indicated their poor work ability. The physical load analysis results are in accordance with questionnaire results and employees are subjected to severe physical overload. Hence, ergonomic risks can have impact on workers work ability in longer term, as work related diseases could appear.

Keywords: Latvia, ergonomics, risk management, manufacturing, physical load, work ability, work environment

Introduction

In recent years, one of the largest and most developed sectors of the economy is manufacturing in Latvia. In general, the sector is experiencing stable growth; starting since 2015 it provided 17% of total manufacturing turnover and 21% of total exports of goods. The manufacturing industry provides 123.5 thousand jobs, which corresponds to 13.8% of the total number of employed in the country (Ondza, 2017).

In recent years, a rapid increase is observed in the metalworking and mechanical engineering sub-sectors, where production volumes rose by 15–35% (Abolins, 2018).

With the growth and industry development, the number of employees who are exposed to work environment risks increases. Hence, the risk analysis of the work environment at the sites becomes very significant, that will allow one to develop appropriate health and safety solutions and increase work ability (Lejins, 2016).

Work abilities are influenced by physical overload at work (lifting, moving heavy loads, repeated hand and arm movements, awkward postures, work with hands raised above shoulder level etc.) (Schneider, 2001; Jaffar, 2011). As a result, employees suffer from physical overload, fatigue, reduced concentration, causing various occupational diseases and accidents (Vanadzins, 2013).

By providing good ergonomic conditions at the workplaces, the work abilities and productivity can be increased and employees will be more motivated to work better (State Labour Inspection, 2017). At the same time, it will reduce the number of occupational diseases and related safety and health problems.

The term work ability is understood in this research as "occupational competence, the health required for the competence, and the occupational virtues that are required for managing the work tasks" a term that Finnish researchers coined in the 1980s as a response to what they perceived as an overemphasis on disability (Ilmarinen, 2006, 2009; Tengland, 2011).

It should be noted that not only work can reduce work abilities, it can also be influenced by factors outside the workplace, such as family relationships, friends, social life, as well as various personal aspects, age, health status, various addictions (alcohol, smoking) and, of course, physical fitness and physical activities (Ilmarinen, 2005).

Taking into account the fact that in Latvia increases in health problems caused by ergonomics risks at the workplaces, the research topic on how ergonomics risks influence work abilities is significant (Roja, 2018).

The aim of the research was to find out the ergonomic risk influence on workers work ability at manufacturing organisations in Latvia.

Materials and Methods

For the research were chosen a metal manufacturing organization with such departments: metal boards, metal constructions and painting departments. The manufacturing company employs 80 workers. Accordingly, the total number of respondents and considering the probability of errors, the number of respondents to which the results are considered reliable was

calculated. With a 90% confidence level, at a margin of 5%, the estimated minimum sample size is 62 respondents. In the survey participated 63 respondents. There are several departments in the company that analysed workplaces that could have increased workload.

In the research, workstations were chosen from three different departments: the metal boards department, the metal structure department and the painting department. In the metal boards department, the processes of assembly, packing and quality control were analysed, but in the metal structure department the assembly and quality control processes. The operations of the boards' sorting line were analysed in the painting department. The characteristics of involved research subjects are represented in Table 1.

Table 1. Background factors of the subjects: length of service, age, height, weight, body mass index (BMI)

Population (length of service)	n	Mean age ±SD	Range	Mean height, cm±SD	Mean weight, kg±SD	Mean BMI, kg/m²±SD
Metal boards department	25	31,3±8,1	22–45	1,70±0,07	69,0±12,8	23,9±3,3
(0–5 years)	14	32,3±10,3	22–45	1,73±0,06	61,5±5,0	20,5±2,5
(6–15 years)	11	29,5±2,3	28–32	1,67±0,08	79,0±9,0	28,3±2,7
(> 16 years)	–	–	–	–	–	–
Metal construction department	27	32,9±10,7	20–53	1,73±0,06	68,0±12,9	22,7±3,4
(0–5 years)	23	32,7±11,6	20–53	1,68±0,05	60,0±6,5	21,3±2,8
(6–15 years)	5	34,0±5,7	30–38	1,70±0,04	73,1±7,9	25,3±3,0
(> 16 years)	–	–	–	–	–	–
Painting department	11	33,4±8,1	27–46	1,69±0,06	68,1±9,8	23,8±3,1
(0–5 years)	5	37,5±5,5	31–46	1,66±0,07	69,2±5,6	25,1±2,5
(6–15 years)	6	27,5±2,3	27–35	1,68±0,04	71,1±6,5	25,2±2,8
(> 16 years)	–	–	–	–	–	–

The body mass index was calculated using the formula weight/height^2 considering four BMI categories: underweight: BMI $\leq$ 19 kg/m^2, ideal weight: 19 $<$ BMI $\leq$ 25 kg/m^2, overweight: 25 $<$ BMI $\leq$ 30, severe overweight: BMI $>$ 30 kg/m^2 (Bhattacharya, 2007).

In the research, the following methods were applied: The checklist method, Key Indicator method and work ability index evaluation.

The checklist method as questionnaire was conducted to find out the opinion of the workers on the condition of existing workplaces, complaints about workload, work organisation, as well as worker's opinion on work abilities. The results acquired were processed by applying statistical data processing program SPSS.20.

The Key Indicator Method for assessment of the manual handling of heavy loads developed by the German Federal Institution for Industrial Safety and Occupational Medicine was used to assess social care workers ergonomics risks (Steinberg, 2006). Key indicators (criteria) to be taken into account are: object mass rating points (M); the employee's posture rating points (P); working conditions rating points (C); working time/intensity value points (I). Risk assessment is carried out by physical workload risk score (RS) using the following formula: $RS = (M + P + C) \times I$. According to this method work hardness categories (or risk range) are: I – light work or low load situation ($RS < 10$); II – moderate work or increased load situation ($RS = 10…25$); III – hard work or highly increased load situation ($RS = 25…50$); IV – very hard work or physical overload ($RS > 50$).

The work ability evaluation was done through the Work Ability Index (WAI) developed by Finnish researchers and based on workers' self-perception (Tuomi, 1998; Ilmarinen 2009). It is composed of seven items: current work ability compared with the life time best, work ability in relation to job demands, number of current diseases diagnosed by a physician, estimated work impairment due to diseases, sick leave during the past year (12 months), own prognosis of work ability two years from now and mental resources. The final score varies from 7 to 49 points, distributed across the following categories: poor (7…27), moderate (28…36), good (37…43) and excellent work ability (44…49).

Results and Discussion

In total, 63 employees were involved in the questionnaire, 42 of them women and 21 men. Most of the workers (26 employees) were in the age group of 26–35 years, followed by employees in the age group of 36–50 (18 employees) and 15 employees who rank in the 18–25 age group. The staff noted that the arms, legs, back (46 employees) are the mostly affected during the working process, followed by wrists and fingers (22 employees), arms and legs (See Figure 1).

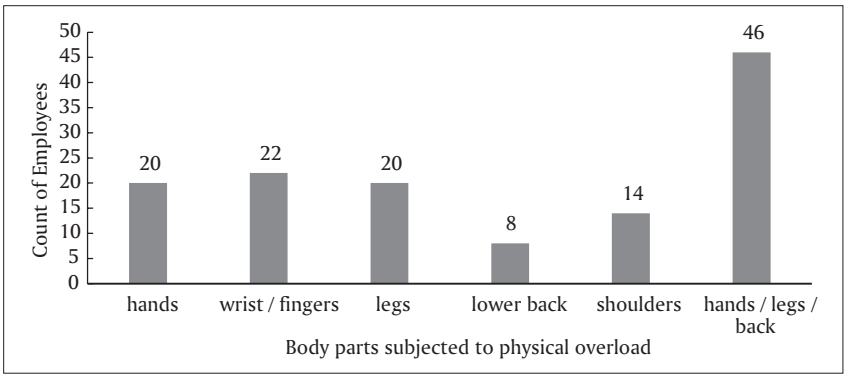

Figure 1. Employee`s opinion on body parts subjected to physical overload

The results show that workers mainly complain about pain in different parts of the body. The largest number of employees complained of pain in the back (65% of all respondents), in hands (46% of all respondents) and in legs (21% of all respondents). The results are shown in Figure 2.

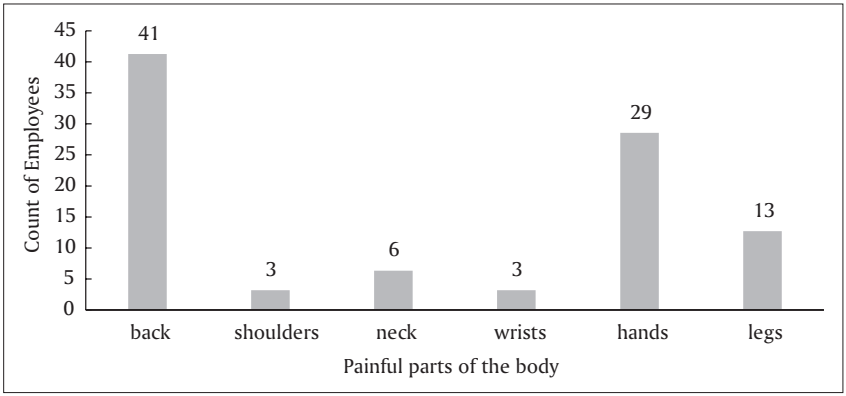

Figure 2. Employee`s opinion on painful parts of body

Comparing the obtained results with the lifting weights, it can be concluded that the employees most often carry loads in the range of 5–10 kg (29 respondents), followed by a lifting weight of 10–15 kg, as indicated by 17 respondents, and even sometimes during the work process it is necessary to move and carry load in the range of 15–25 kg (marked by 8% of all respondents).

In order to analyse the ergonomics risks in metal boards department, metal construction department and painting department regarding moving and lifting of physical load, the Key Indicator Method was applied. According to Key indicator method score for total workload was calculated and such parameters were considered: workload, value points dependent on the weight of load to be moved, value points dependent on position of the body during performance of operations, value points dependent on working conditions, value points dependent on the length of work shift. The results are shown in Table 2.

Table 2. Key Indicator Method risk degree for human factor analysis regarding lifting and moving physical load (L-load weight, P-work posture, C-work conditions, I-work intensity), standard deviation (SD), Work load score (WL), risk degree (R_d)

	L±SD	P±SD	C±SD	I±SD	WL	Risk degree R_d I–V
	Number of points					
Metal boards department (n = 25)						
Metal board operators (n = 6)	2.7±1.3	4.2±1.5	0.9±0.5	8.0±1.3	62.40	IV
Metal board quality control operators (n = 7)	2.3±1.6	4.4±1.3	0.9±0.6	7.8±1.2	59.28	IV
Metal board packing operators (n = 12)	2.5±1.5	4.1±1.1	0.8±0.5	7.2±1.7	53.28	IV
Metal construction department (n = 27)						
Metal construction operators (n = 13)	3.9±2.1	3.5±1.5	0.9±0.4	7.4±1.3	61.42	IV
Metal construction quality control operators (n = 14)	3.4±2.1	3.2±1.7	0.7±0.6	6.2±1.0	45.26	III
Painting department (n = 11)						
Painting operators (n = 11)	2.1±1.2	3.2±1.5	1.0±0.8	2.6±2.0	16.38	II

Analysing the physical workload in metal boards, metal construction and painting departments during lifting or moving heavy loads, the metal board operators, metal board quality control operators, metal board packing operators and metal construction operators are exposed to a most

severe physical overload, what corresponds with the risk degree IV. Metal construction quality control operators fall into risk degree category III. Accordingly, to the methodology, the workload in these occupations is an endangerment to the workers' health. For this reason, special attention must be paid to necessary preventive measures in order to allow fatigued muscle groups to relax and further, a more detailed investigation of physical load is necessary. Painting operators fall within risk degree category II (moderate work), where their workload with respect to lifting of heavy loads is appropriate and slight improvements are necessary.

To find out the ergonomics risk influence on work abilities of the workers in metal boards department, metal construction department and painting department, an analysis of work ability index (WAI) was carried out. The WAI questionnaire was filled out. In total, 63 employees were interviewed, 42 of them women and 21 men. Mainly workers evaluate their work abilities as good and excellent, only some indicate poor and moderate work abilities. The results are provided in Figure 3.

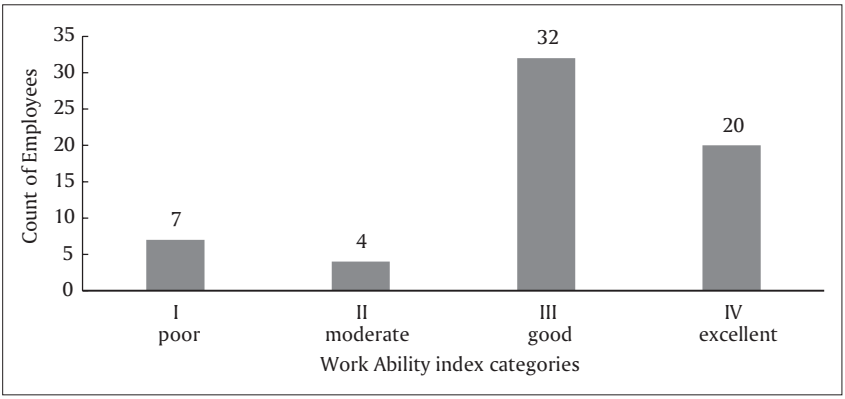

Figure 3. Count of the employees and Work Ability index categories

By overall work ability analysis, half of the employees have good work abilities and rank in Category III accordingly to work ability index, but 32% of respondents indicated that they have excellent work abilities (Category IV). It should be noted that 7 respondents indicated that they have poor working ability (category I). Total work ability evaluation is shown in Table 3.

Table 3. Work Ability Index (WAI) results (n = 63)

WAI	Scores	Rating scores	Employees view/ Expert view
Metal boards department (n = 25)			
Metal board operators (n = 6)	7…49	43.2±5.4	41/33
Metal board quality control operators (n = 7)	7…49	42.0±4.9	40/38
Metal board packing operators (n = 12)	7…49	35.8±6.5	37 /35
Metal construction department (n = 27)			
Metal construction operators (n = 13)	7…49	37.5±5.1	38/35
Metal construction quality control operators (n = 14)	7…49	38.3±4.3	39/35
Painting department (n = 11)			
Painting operators (n = 11)	7…49	39.6±3.6	40/37

Deeper analysis of work ability was carried out accordingly WAI methodology. When comparing existing work-related physical and mental workloads (scale 1–5), workers noticed that their work ability ranges from medium to very good. Most believe that their work capacity is good, as is indicated by 44% of respondents. The same is true of the mental workload, which means that the majority (57% of respondents) believe that they have good work abilities. The average score is 4 ± 1, which corresponds to good work ability.

As it can be seen in the Figure 4, the majority of the workers have not had any illness in the last 5 years (32% of respondents). One and two diseases were indicated accordingly by 24% and 19% respondents. Workers, who had 5 or more illnesses, correspond to 5% of the respondents. The most common illnesses among workers are influenza; it is indicated by 33% of respondents, followed by colds, angina, etc. diseases. It can be concluded that special attention should be paid to the microclimatic parameters of the workplace – temperature, air velocity rate, air humidity, since 50% of respondents indicated complaints on microclimate and also point out angina as main disease at the workplace.

The subjective assessment of work ability reveals that the score obtained is in the range of 4 to 6 (the assessment scale is in the range of 1 to 6), where 49% of respondents have indicated that they have no incapacity for work due to illness. 30% of respondents indicated that the incapacity is very rare (2 to 3 times a year) and minority (21%) indicated that the incapacity is 3 to 6 times a year.

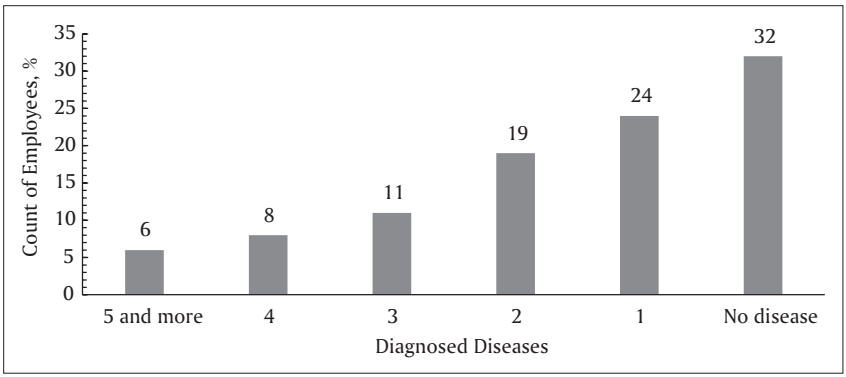

Figure 4. Count of the employees and diagnosed diseases in the last 5 years

The results show that 32% of the respondents are delayed from work for 1 to 9 days due to illness, as well as another 32% had delays of 10 to 24 days. There was no delay at all for 24% of employees. For people who have been absent for work, the main reasons were cold, flu, respiratory infections, back pain and knee pain. The cause of the diseases could be the inadequate microclimate, dry air causing airways inflammation, as well as inappropriate air velocity, resulting in cold. In addition to this, it was found that workers are delayed because of both back pain and knee pain. This could be due to the fact that work should be done while standing, as well as the inadequate gravity of being crippled (back pain). Therefore, attention should be paid to both the characteristics of the process and the working environment conditions. Number of days delayed due to illness is shown in Figure 5.

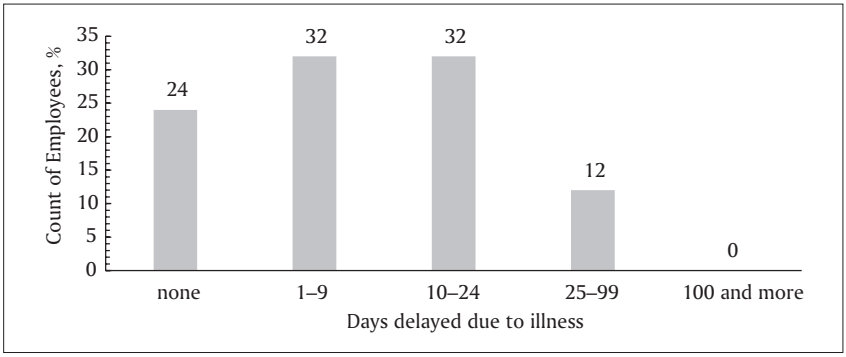

Figure 5. Count of the employees and days delayed due to illness

Most workers admit they are confident to be able to work and work conditions will improve in the future, as indicated by 87% of the respondents. 5% of respondents have indicated they are not sure if they will be able to work, while 8% have indicated that they will be able to work certainly in future. Hence, a deeper analysis is necessary to find out which employees are delaying work due to various illnesses and may need to change work tasks in order to relieve the current workload.

Analysis of WAI section about workload influence on work abilities concludes that the majority of respondents (56%) consider that their work is not heavy and working conditions are very good. A moderate load was indicated by 44% respondents. The mutual relations in the company are measured, as medium and good and internal collaboration among colleagues is very good. It can be evaluated as positive sign in the organisation, but such results can be also misleading. That could be explained by employees fear of unemployment and employees perhaps do not reveal the real condition of their health and work ability; hence, the ergonomics risk influence on work ability in real work conditions is higher than opinion of the employees. It is also in accordance with other research and existing intervention research suggests that workplace conditions can influence work ability, for example, musculoskeletal disorders risk factors (Chaisson, 2015), stress at work (Habibi, 2014), mental workload, shift work (Safari, 2013), vibration (Gerhardsson and Hagberg, 2014) etc. Interventions designed to improve health and lifestyle behaviour (Pohjonen and Ranta, 2001) and job restructuring (Marqueze, 2008) are associated with higher work ability. The research will continue to elaborate concrete interventions to minimize ergonomic risks and improve work ability at the workplaces in the metal manufacturing organisation.

Conclusions

Research results reveal that employees at the metal manufacturing organisation mainly complain about overload at the workplaces, ergonomic risk-related health problems at the work, especially of pain in the upper back and lower back, as well as pain in the hands and wrists. The physical load analysis proved the questionnaire results that employees are subjected to severe physical overload, excluding painting operators, who fall within moderate work risk degree category. At the same time, employees consider their work ability as good and very good, as indicated by 83% of respondents. Those who have longer work experience, both in company and in general, have indicated their poor work ability. This can be explained as they have a variety of work related illnesses that are delayed for a long time, as well as employee's fear of unemployment if they reveal

real opinion on work conditions. Hence, ergonomic risks can have impact on workers work ability in longer term, as work related diseases could appear.

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CHALLENGES IN PROMOTING MUSSEL FARMING INDUSTRY IN A DIGITAL ENVIRONMENT

Zaiga Ozoliņa
Mg. oec.

Biruta Sloka
Dr. oec.

Abstract

Blue mussels are widely distributed in European waters. Mussels are used in food industry and for animal feed; as well it is "green product" with growing consumption. This article analyses promotion activities in the digital environment, which have been implemented by mussel farmers or industry promoters. The aim of this article is to analyse academic publication findings, to evaluate the available digital marketing information about mussel farming and indicate the most efficient use of the digital marketing. Research methods: analysis of scientific publications, analysis of resources published on the Internet and social media in the field of mussel farming. The main findings of the research: researchers of blue mussel are those who occasionally update information on the websites about the topic; some of them have established specific blogs. In addition to researchers' publications, the information on mussels can be found in social media via photos and videos. Professional associations take part by publishing information in social media networks, making them more attractive for stakeholders and promoting their activities in the society. Direct marketing is not common form in this field. However, the lack of information published by mussel farmers in social media has influenced stakeholders' interest and might affect the development of the industry. The research has revealed the regional divergence in market players' behaviour. The results of published researches indicate that blue mussel industry has potential that has not been brought to light for the society in the global market.

Key words: digital marketing, mussel farming, green marketing, promotion activities

Introduction

Mussel farming takes on more and more importance in many countries including Norway where many activities are taken to make mussel products available for consumers and perceived opportunities and pursued strategies are examined (Ottesen, Grønhaug, 2004). Mussels are used in the food industry, for animal feed, as well as a fertilizer (Goulletquer, 2014). Blue mussel intakes phosphor and nitrogen by filtering water (Lindahl, 2012). The development of mussel production is fostered by distributing

the product in the international market similarly as it has been done with Chilean or New Zealand mussels. Mussel cultivation in the Baltic Sea has not been widespread.

Digital marketing as a promotional tool has become increasingly popular and has been studied in academic research. With the increasing influence of the Internet, many promotional activities have been done through websites.

Products which are environmental-friendly might be distributed as a "green product" which fosters its consumption. However, product labelling with a "green-product" sign is not always promotional, as there might arise connotations that the product is more expensive. Therefore, more academic research is devoted to this topic.

This article analyses the promotion activities in the digital environment, which have been implemented by mussel farmers or industry promoters.

The aim of this research is to analyse academic publication findings, to evaluate the available digital marketing information about mussel farming and indicate the most efficient use of the digital marketing.

The research objectives: to analyse scientific findings regarding the marketing approaches in mussel production; to analyse practical findings and publications on the Internet and social media; and to perform the content analysis of publications on marketing approaches in mussel production.

The research methods: The analysis of scientific publications and the analysis of resources published on the Internet and social media in the field of mussel farming.

Theoretical findings

"Fisheries markets are undergoing a major transformation because of globalisation and the ever-growing liberalisation of international trade" (Laxe et al., 2016). Increasing interest in the Baltic Sea Region to encourage blue mussel farming requires new promotion activities. Successful distribution of product would contribute mussel farmers to become wealthier. Successful product promotion would persuade researchers to investigate the field broader. For the time being several topics in scientific publications have been found: on modelling of blue mussel production (Atalah, et al, 2017), on seasonal and geographical aspects of blue mussel production (Fernández, et al., 2015), and on aspects of mussel farm size (Kraufvelin and Díaz, 2015). Moreover, marine issues are regulated by the European Union and mentioned in Europe's Blue Economy (Winder and Heron, 2017), as well as analysis of extensive experience on mussel culture and consumption in Spain (Figueras, 1990). Economic aspects and feasibility on

mussel production as co-activity has been also on interest of researchers (Buck, et al., 2010).

Promotion is defined as all the activities that are directly related to publicity, advertisement, sales promotion, packaging, exhibitions, and direct marketing advertising with a customer (Baker, 2003). In the 1960s, a model called the Adaptive Planning and Control Sequence was developed to determine the optimal promotion mix (Petit and McEnally, 1985).

Peattie and Peattie (1994) define marketing limits as follows: "marketing activities – usually specific to a time period, place or customer group, which encourage a direct response from consumers or marketing intermediaries, through the offer of additional benefits".

Mussels' sales have been generally increased within the European market (Girard and Mariojouls, 2003). Different countries have various approaches to mussel marketing (Bhatta, 2002). Specific marketing aspects are applied for ethnic food marketing (Choi and Henneberry, 2000) and the traditions of their use (Acebron and Dopico, 1999). Mussels' production place has to be chosen carefully therefore, scientists are conducting researches to find better solutions (Mongruel and Thébaud, 2006).

The interest to develop sea aquaculture has increased by investigating research projects and publishing research results. An increasing demand for fish products (The World Bank, 2013) also encourages entrepreneurs to produce and promote sea products.

The companies prepare different kind of marketing materials for promoting amounts of sales and consumption promotion. Several researchers as for example King have pointed out in 1985 misunderstanding aspects of incorrect marketing and has mentioned that not everything that companies define as marketing can be applied to marketing (King, 1985; Peattie and Crane, 2005).

Green products are not always profitable and they might be expensive (Walley and Whitehead, 1994). Moreover, researchers state that "Green marketing and advertising are ever popular strategies to reconcile business interests with ecological interests, and more precisely, with the increased concern for sustainability issues" (Alves, 2009).

Some promotional materials are prepared to create an outstanding image of the company whereas some provide the wrong feedback. The companies, which have been on the frontline as a target for criticism use "green spinning". "Green spinning was always going to fail because unless they are involved and consulted, contemporary consumers and pressure groups are unlikely to be fully convinced by the protestations of commercial enterprises" (Peattie and Crane, 2005).

Social media influence and the use of social media for marketing are on researchers' agenda as well: "Social media have changed marketing

by shifting the scalability of influence, and the ways in which consumers share, evaluate and choose information" (Smithee, 2011; Moustakas, 2016). Use of different marketing channels could create some problems, which are "With the advent of computer networks and entertainment programs, traditional media, including television, have lost viewer or readership and the power of advertising has been reduced". Moreover, "the rapidity of online communication and multiple information sources make the advertising and marketer sourced promotion considerably less relevant" (Patino, Pitta and Quinones, 2012).

Promotion activities have been changed in last decades and are used in all fields: this process is going to continue with development of different marketing channels and extensive use of new information technologies tools.

Globalisation has started to change consumer mentality regarding ethnic food consumption. Due to a shift of the ethnic ratio of inhabitants, the consumption of ethnic food or regional traditional food has shifted. Consumers are expressing their interest in ethical consumption (Bray et al., 2011; Carrigan et al., 2004; Kim and Chung, 2011). The increasing interest in ethical consumption among consumers refers to some appropriate grounds such as heightened media coverage, proliferated levels of information, and increased availability of "alternative" products (Strong, 1996; Newholm and Shaw, 2007). In addition, consumers are ready to pay premium price for fish (Leek et al., 1998). As an example, inhabitants have started to use marine products, which traditionally were not widely and commonly used in the Baltic Sea area, such as seaweeds, shrimps in the Baltic Sea Region.

The financial crisis and free access to social media have reshaped the flow of and access to promotional information, and the more extensive use of this information for personal and business purposes.

Deeper analysis in the field of end-user behavioural studies has not been carried out indicating the awareness and responsibility of mussel consumption for mussel production in mussel's farms for agricultural or environmental purposes. Mussels are known as supporters of environment protection – they act as water cleaners by filtering it. That might change the consumer mentality about the price of the product as people are more interested to consume "green products" and they are ready to support this kind of production.

Publications on mussel farming on the Internet

There are specialised authorities who actively work on marketing activities on mussel farming and consumption of mussel farming products.

One of such sources is marketing research company "Brand24" performing analysis and being one of the most effective method of monitoring respective brand or product on the Internet. It is also a tool that measures the buzz around the respective brand, product or keyword. To analyse promotional activities in mussel farming the Internet source "Brand24" was used. On the website, specific words were selected (mussel, mussels blue mussel, mussel farming) and found using word search, thus indicating word use frequency.

Table 1. The key words mentioned in English on Internet in the last 12 month (situation on September 20, 2018)

Selected words	Total	Face-book	Twitter	Insta-gram	Blogs	Forum	News	Video	Other
Mussels	9564	2118	1486	2948	2285	241	87	195	204
Mussel	3685	409	408	1185	1159	47	65	133	279
Mussel farming	223	3	125	7	18	2	8	2	58
Blue mussel	390	15	173	55	38		13	13	83
Sea aquaculture	50		23		2		7	3	15

Information source: Zaiga Ozoliņa's calculations based on collected information in website Brand24, 2018

In the last 12 months, the word "mussel" or "mussels" was mentioned mainly in Instagram, and *Facebook* was the second most important source.

People share photos from dinner, preparing food in the kitchen or photos from nature. People like to publish information about themselves sharing photos.

The main part of information in the position "other" comes from projects on mussel production and consumption supported by the European Regional Development Bank or by regional institutions or information published as job advertisements.

The word "mussel" or "mussels" together with words specifying the Baltic Sea Region (Germany, Sweden or Denmark) were mentioned only in two companies' websites during the last 12 months.

In the Baltic Sea Region, there are many companies working in the mussel farming industry or selling mussels, and only a couple of them have homepages. Some of the companies are involved in publication activities, and others do not promote their company or products at all.

The mussel might be popularised using green marketing tools because it intakes nutrients from water however this kind of product is not cheap.

Mussel farmers do not invest in the popularisation of their products, but researchers update their websites to inform the society about their achievements. The results showed that mussel farming is not well promoted by entrepreneurs in the Baltic Sea Region. Empirical investigations confirm that several neighbouring countries apply the same approach to promote the mussel production industry, but they do not publish information in English and they update the information rarely. The collected information did not testify that different countries had different approaches on mussel marketing (Bhatta, 2002); for example, several associations (in New Zealand or in Canada) shared information on their websites, thus, increasing stakeholder's interest in their country, whereas in the United Kingdom they promoted products on a company's website.

The absence of promotional materials might affect customers' interest. The consumer does not have information about the trading areas or the food recipe is in a foreign language that makes it difficult to ascertain the way the product should be used. Customer search websites for information, thus increasing its awareness on the product or information regard the product.

Promotional activities on mussel farming have not been organised regularly, the documents are prepared with long-term intervals, and it does not intensify informative reliability of the mussel production industry and business.

The Food and Agriculture Organisation of the United Nations (2012; 2017) and the World Bank (2013) fill in the lack of information by preparing reports about a certain task and provide comprehensive information about the mussel production especially taking into account the benefits for cleaner environment. These reports are based on well-grounded facts and are used also by researchers worldwide for their own papers.

There are statistical data and reports prepared by different European institutions, for example, *EUROFISH* and *EUFOMA*. The mentioned institutions also use the Food and Agriculture Organisation of the United Nations data and some of the reports are well grounded.

Market analysis of blue mussel industry perspective has been carried out in several countries and some of the research was carried out by the Food and Agriculture Organisation of the United Nations.

Developers of blue mussel's market have published information on their own websites; some of them have established specific webpages. Professional associations take part in publishing information on mussel production and possible consumption in social media networks, making them more attractive for stakeholders and promoting their activities in the society. Direct marketing is not a very common form in the

mussel production industry. The lack of information in the social media has influenced the interest of stakeholders and might affect industry development as well.

Due to the published research results, it is possible to observe the increase of interest of stakeholders, scientists and regional governmental institutions taking an active role in the development of mussel production industry.

Research has revealed the regional divergence in market players' behaviour in the Baltic Sea Region.

Promotional activities by public organisations

In 2013, the government of Canada was involved in mussel farming marketing activities to support the industry by "repairing" sales volumes decrease of blue mussel and increase the amount of sales in the world after the financial crisis of 2007–2008. The mussel were kept in water for several years due to overproduction of mussels and above-mentioned promotional activities helped to sell these mussels (Government of Newfoundland and Labrador, 2013).

In India, there were districts where women were involved in mussel farming. They were provided with instruction in mussel culture and the World Bank (Department of Agriculture, Government of Maharashtra, 1994; Vipinkumar, 2013) financed these activities.

Other promotional activities organised by the public organisation were not reflected in scientific publications.

Using digital marketing as a promoter of the mussel farming industry

Interest in mussel product decreases because of unregularly organised promoting activities in mussel market. One of the reasons might be the consequences of market failures. "From the perspective of market-environmentalism, environmental problems are basically conceived as the consequence of "market failures" (Muradian and Cardenas, 2015). It does not have either negative (pollution) or positive (ecosystem services) externalities. As argued by Cohen and Winn (2007) market imperfections provide opportunities for entrepreneurs to develop new technology and new business models that aid the sustainable development (Mattson, 2016).

Collecting information about different countries' experience, the authors have found that the mussel production industry might be promoted using the Internet as a place where the basic information on the market

situation is updated regularly, which is useful for the end user – mussel consumers. For example – a recipe of meals from mussels or a photo of dish with mussels, thus, the product user could benefit.

Kumar (2017) published and discussed his extensive research results highlighting the following themes of the green advertisement focusing on consumer – focused intent (see figure 1)

Company – focused intent	Intent to communicate corporate environmental approaches	Intent to develop believability towards environmental claims
	Intent to inform consumers	Intent to engage consumers
	Consumer – focused intent	

Source: Kumar, 2017

Figure 1. Intent classification on "green advertisement"

Mussels are promoted as a product for human consumption as environmental friendly product, and it might be promoted as well as a tool that reduces nutrients (Stadmark and Conley, 2011) in water (such farms are established between fish farms, for example in Denmark). It is also possible to relocate mussels from one place to another in order to restore destroyed mussel beds. Promotional materials about mussel farming might cover several research topics mentioned in Kumar's (2017) research:

- mussels reduce nutrient and increase water transparency, this also fosters the development of healthy spawning grounds, and sometimes mussel farms work as feeding area for birds; and
- mussels are used as food for humans for many centuries. The recipes and product nutrition in recent years are more frequently uploaded on the Internet. It increases the end-user interest in the product.

The website with target audience segmentation helps to identify all the market players and differentiate customers according to their needs and producer/distributor offers.

The content for creating the necessary marketing techniques is a key component for every self-respecting market player. Researchers have proposed that it might be divided into static content, dynamic content and user generated content (Chaffey and Smith, 2012). The content might be extended by including instructive and educative information in various formats (Holliman and Rowley, 2014).

The promoter of farming should recognise the target market and the target audience considering his or her own product and service possibilities.

Working responsibly and creating the long-term mutual business relationships with either business players or product consumers a common goal is to reshape the consumer society driven behaviour into environmentally responsible user behaviour.

Pulizzi et al. (2011) have indicated business aims of content marketing:

- Brand awareness and reinforcement
- Lead conversation and nurturing
- Customer conversion
- Customer upsell
- Passionate subscriber.

As regards the field of mussel farming, the responsible customers nurturing starts by the involvement of stakeholders in creating an active social platform, thus connecting the existing scientific environment together with consumer's environment by raising the awareness of the use of the natural resources and their connection with the common ecosystem and participation in a food chain.

Mussels are "super green food" that offer tremendous health benefits. In addition mussels are low-fat products and they are an excellent source of protein Omega-3s, iron, zinc, vitamin C and B12 (Chronicle-Tribune, 2011). "Mussels play a key role in aquatic environments and are considered to be "ecosystem engineers" because they modify aquatic habitat, making it more suitable for themselves and other organisms" (Jovic and Stankovic, 2013).

"Mussels are a logical, environmentally responsible and healthful choice" (Cooper, 2015) as they are taking an important role in the aquatic environment. Proper care of the ecosystem and highly valued nutrition places this product on the top of the wholesome food list. These are the basic factors that allow one to revalue this product and range it among the high value added products for general consumption and all those aspects are important to take into account for mussel products marketing activities.

Passionate subscribers might encourage promotional advertising and educational activities providing the necessary information and new ways of how to use the product in consumer's environment. The visual communication via photos and videos play an important role in advertising the blue mussel. This might be a potentially successful channelling tool for producers for further educational and content marketing activities.

Branding and promotion of trademarks have not been analysed in this research.

Every step in mussel product marketing should meet the global principles of environmental responsibility.

The main novelty of the research: researchers of blue mussel are those who occasionally update information on the websites about the topic; some of them have established specific blogs. In addition to researchers'

publications, the information on mussels can be found in social media via photos and videos. Professional associations take part in publishing social media networks, making them more attractive for stakeholders and promoting their activities in the society. Direct marketing is not common form in this field. However, the lack of information published by mussel farmers in the social media has influenced stakeholders' interest and might affect the development of the industry. The research has revealed the regional divergence in market players' behaviour.

The topicality of the research is the fact that blue mussel industry has potential that has not been brought to light for the society in the global market.

Conclusions, proposals, recommendations

1. The use of blue mussel in human consumption has been increased and influenced by globalisation, ethnic and traditional cuisine.
2. Promotion activities of mussel farming and mussel products are not well presented on webpages and social networks. The information about mussel farming and produced mussel products should be systemised and deliberately distributed to reach the target audience and interact with all stakeholders.
3. Creation of digital marketing platforms that are content driven is underway and is only at the beginning of its experience in mussel product marketing.
4. The promotional advertising and educational activities provided by passionate subscribers have not been set up. Dynamic content marketing might encourage a customer to return to buy a product repeatedly. It is possible to increase a product value by mentioning its benefits, therefore increasing customer's willingness to pay more for the product.
5. The common goal for either business players or product consumers is to reshape the consumer society driven behaviour into environmentally responsible user behaviour for creating long-term mutual business relationship. This task might be analysed in other research.
6. Customer conversion requires a particular research as it involves digital marketing and necessary feedback to react upon and reshape the behaviour of the customer and the market.

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FACTORS AFFECTING MERGERS AND ACQUISITIONS IN THE EUROPEAN UNION

Kaspars Mucenieks
Mag. oec.

Abstract

Global economic processes create a situation that companies must plan their activities strategically and in the long term to ensure the competitiveness of the company's survival. Mergers and acquisitions (M&A) is a business development tool whose primary task is to ensure the company's sustainable growth. This is facilitated by factors such as increased competition, technological development, modernization, restructuring of production, a change in strategy, etc. The apparent increase in the number of M&A in recent decades has improved overall knowledge and understanding of due diligence. To make the right decisions about M&A of the company, the owner of the shares and the sale of shares through the future development plans, as well as through reorganisation measures, it is important to make the rating within the relevant market factors, economic and industry analysis, as well as with the business principles of qualitative factors and associated with cash flow and profitability in the financial future of the related factor analysis. This paper examines the main factors in the M&A process. The task of this document is to provide a more complete understanding of the factors affecting M&A.

Keywords: merger, acquisition, due diligence, integration, value

Introduction

Mergers and acquisitions (M&A) represent a popular strategy used by companies for many years. In fact several reviews have shown that, on average, companies create little or no value by making acquisitions (Hitt, King, Krishnan, Makri, Schijven, Shimizu, & Zhu, 2009, p. 524). Economists and venture capitalists are predicting an increase in M&A as nowadays organizations want to grow their market share and presence by building synergies (Jain, 2014, p. 97). M&A in a broad sense can mean a number of different transactions ranging from buying and selling companies, the concentration between companies, alliances, cooperation and joint ventures in the formation of companies. Schuler and Jackson (2001, p. 240) argued that a broad definition of M&A could be used confusion and misunderstandings, because it covers everything from pure merger to strategic alliance. In this paper the definition of M&A will be used in the narrow sense as purchases as purchases of shares or assets on another company to achieve full management and operational impact. M&A of the

company is in particular because the relevant information about the target company is not available to the acquirer (Very & Schweiger, 2001, p. 12). Although the M&As are motivated by the expected synergy between the target and the acquiring firms, some mergers are successful while others are not (Canina, Jin-Young, Qingzhong, 2010, p. 82). In the last years, markets are characterized by disruptive changes as well as M&A activities (Kernstock, Brexendorf, 2012, p. 170). M&A are undertaken on the assumption that the combined company will have a greater value than the two companies alone (Vazirani, 2013, p. 82). M&A processes are complex processes with many challenges in the pre-deal and post-deal phases.

Factors affecting mergers and acquisitions

In the present context of the European Single Market and the globalization among economies, mergers and acquisitions represent the means by which companies increase their competitional capacity (Banulescu, Popescu-Cruceru, Leuciuc, 2012, p. 209). A representative review of the extant research on M&A over the last 15 years produced a list of the most common value studied. The review of the academic literature consisted of computerized and manual questions about the published research reports.

The value of the company will reflect the contents of the solution for the various parameters that are evaluated for its operation:

- market share and competitive position stability;
- income;
- investment need;
- operational efficiency;
- the tax burden;
- cash flow management;
- the degree of risk.

The company is in the process of evaluating a company's or individual's direction value. Most often, the aim of evaluation is the determination of the market value. To successfully plan the further development of the company, merger of the whole or part of the company, buying and selling, capital injections in new directions of activity, new investment in the current transaction, as well as in other cases, the company carried out the evaluation. Company rating as it also helps entrepreneurs, potential investors to evaluate the financial situation and make the right investment decisions. Company evaluation process results in the entire company or its separate actions in terms of value for money. An organization can have multiple values depending on the scoring target. There are different types of evaluation:

- market value;

- the value of an investment;
- the value of company workers;
- salvage value;
- balance sheet value, etc.

The value of the company is composed of several factors. The first – the ability of a company to make money, the second – company assets that belong to the company, i.e., the material base, the third – goodwill: the word, the technology used, a market where it's working, staff. Results also suggest that the asset specificity discount in the target return is more pronounced if target firms are financially distressed. Asset specificity of a firm is an important determinant of the firm's value (Kim, 2018, p. 378). Operating cash flow increases the company's turnover and other revenue associated with the core, but it reduces production, administration, sales and other operating costs. The difference between revenue and the cost is the company's profit before depreciation deductions, interest payments and taxes (EBITDA), so the higher the EBITDA is obtained; the higher cash flow from operating activities the company is obtained. This variable directly affects the company's turnover and costs. Developing and directing profitable products and running costs, the company increased cash flow from EBITDA. In Latvia, to determine the value of the company, also uses EBITDA factor. EBITDA is the base business profitability, which usually take into account the buyer (Pratt, Reilly, Schweih, 1996, p. 338). Financial analysis of the company's important role in the M&A process management. Analysis tasks: to determine the effectiveness of the company's activities; identify potential business development directions. Analysis of economic activities is a prerequisite for planning. So the company can plan their actions in the future, it is necessary to analyse the results of the previous operation. Nowadays, more and more business owners and managers understand that company's evaluation is a tool used to assess how successful the company implements its strategy, and what are the main elements of its competitiveness.

Due diligence review

From a theoretical point of view, due diligence process is largely in line with the prospect organizational learning theory (Barkema & Schijven, 2008, p. 599), more explicitly teaching (March 1991, p. 80). Under this perspective, the company learns with each of them and can transfer this learning effect to future M&A. Challenge the M&A process is such that the process is more complicated than the operating company, for example, production, pricing, distribution, etc. Traditional legality checking process is primarily focused on tangible assets or documents relating to the operation of the company

resulting in a legal, accounting and tax issues (Harvey & Lusch, 1995, p. 19). Consequently, the main legality checks are still financial and although the results of M&A transactions show a lack of traditional credibility testing approach (McGrady, 2005, p. 21). Business consultants are based on regular experiences based on best practices, using experience and feedback from projects with your customers. Look for factors that are mostly simplified and suitable for a large number of M&A. The main role of the due diligence process for M&A is to evaluate the benefits and responsibilities of M&A of the company with the analysis methods relating to the company's past, present and future are expected to purchase business. An in-depth examination of business process occupies a significant role in the M&A. If this process is missing, there is a great possibility that in the future it could cause bad financial indicators of the company. It is important to create a management team that will make due diligence process, a team that evaluated the company systematically both before and after M&A. Due diligence process see the problems that must be resolved in the company's M&A to be successful. The due diligence includes: financial risk analysis, the financial position of the company and the determination of the value, legal risk analysis, tax risk analysis and evaluation, financial indicators for conditions where reliable information is difficult to obtain, risk analysis staff. Often M&A require the national regulator or another third-party authorization. Restrictions may be imposed by the competition law; the transaction may be required for other government agencies to agree. Due diligence indicates the existing and potential liabilities. With an in-depth exploration of the company is evaluating whether the agreements contain specific restrictions or obligations. Due diligence is in the process of acquiring the company, which is testing a company takeover object for determining whether the proposed transaction, the justification is based on the financial and strategic indicators. Need to define questions, which is acquiring a company must establish a plausibility check (Cullinan, Roux, Weddigen, 2004, p. 101). The operation and development of the company is associated with future prospects, opportunities, risks and uncertainties, the company's performance depends on the skills to use modern business management techniques and tools. The findings suggest that identifying and prioritizing relevant fields in the context of integration would improve the resource allocation decision and the effectiveness of post-integration evaluation (Chang, Chang, 2014, p. 39). Most existing research on M&A of the results of the study results on the company's profitability, which is based on stock prices. However, there are studies that use information about the company's accounting results in annual reports. D. Mueller was one of the first to use accounting data analysis of mergers and acquisitions for evaluation. He analysed the merger transactions of 247 from 1962 to

1972 for the coming three years after the merger. D. Mueller studied the return on assets, equity capital profitability. Similar studies on enterprise's accounting data after the merger was also D.Ravenscraft and F. Scherer (Ravenscraf, Scherer, 1989, p. 62), A. Seth, P. M. Healy, A. Ghosh who studied the profitability of the company, which is 315 merged during the period from 1981 to 1995 (Ghosh, 2001, p. 156). Most of the risk factors mentioned in the practical studies have already been studied academic literature. Business consulting studies mainly focus on overcoming practical obstacles learning process and highlight the area in which the involvement of consulting companies provides added value. They are also regards the execution of operational transactions as the decisive criterion for success, which determines the potential impact on performance after the acquisition stage. Therefore, partial vertical integration is profitable since it constitutes a strategic device to relax competition (Fiocco, 2016, p. 150). Vertical integration brings better coordination within the integrated firm, which boosts its investment incentive at both upstream and downstream levels (Liu, 2016, p. 951). An extensive body of research supports that firms acquire other firms in order to innovate and/or become more sustainable (Park, Krishnan, Chinta, Lee, 2017, p.122). The type of knowledge is a critical distinction for the value of M&A implementation (Ranucci, Souder, 2015, p. 275). When organizational leaders can no longer achieve their goals through internal growth engines, they often embark on a M&A (Recardo, Toterhi, 2015, p. 17). M&A are the important mechanisms through which companies can achieve growth, gain access to new markets and diversify their activities (Savovic, 2017, p. 97). Companies use mergers to increase their stability and improve economic parameters (Sobolev, 2015, p. 2).

Integration

Most M&As fail to meet the expectations of the purchasers. It is clear that the due diligence, valuation analysis, and negotiation that precede the closing of a transaction cannot guarantee its success. Instead, the synergies and assumptions that supported the decision to acquire a target business will be realized only if the purchaser effectively integrates the target. Unfortunately, many purchasers either fail to plan the integration of the target adequately or conduct the integration process too slowly (Venema, 2012, p. 50).

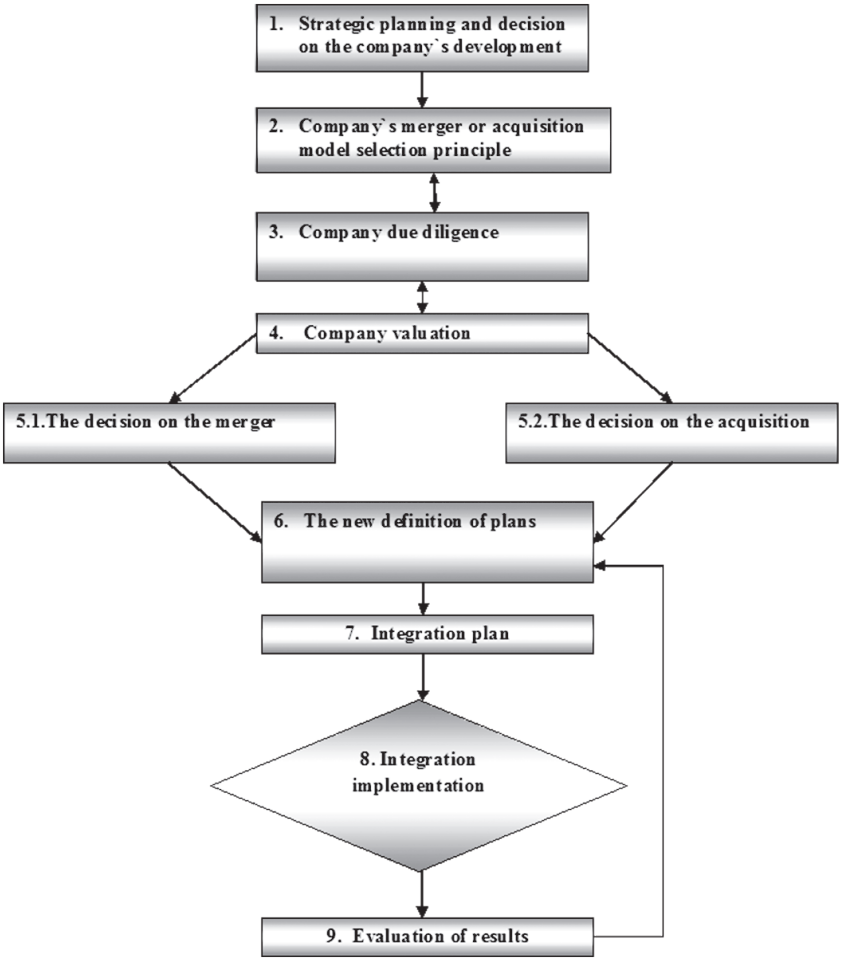

Figure 1. Trade mergers and acquisitions process

Source: author developed

The integration of acquired or merging firms is a key driver of the success or failure of M&As (Steigenberger, 2017, p. 409). Postmerger integration plays a critical role in M&A success (Graebner, Heimeriks, Quy, 2017, p. 4). Managers can plan a successful integration process following a M&A by selecting the right strategy and managing the integration process (Barros, Dominguez, 2013, p. 983). M&A success is a function of strategic

complementarity, cultural fit, and the degree of integration. Strategic complementarity also positively influences cultural fit and the degree of integration. Cultural fit positively influences M&A success, but surprisingly has a negative impact on the speed and degree of integration. The degree of integration is positively related to speed of integration (Bauer, Matzler, 2014, p. 156).

Author has improved its M&A management process the approach is based on several stages (see Figure 1).

1. Strategic planning and decision on the company's development

Before the head consists of the company's strategic plan it is to take a decision about the direction of development. When deciding on what will be the company's growth strategy, one of the solutions is to M&A. After the decision all the next step is inherently geared toward change. Strategic decisions are also related to the company's organizational structure. Be responsible for developing an effective development of strategic plans, the company's management to ensure organizational and methodological prerequisites and care should be taken to bring about the development plan objectives and deadlines.

2. Company's merger or acquisition model selection principle

Company merger or acquisition means that the company has to choose the appropriate model, under which conditions will be an acquisition / sale or merger. The model is built in accordance with the company's strategic decision on development. Businesses must be able to actively respond to changes in the market. If the company's reorganization plan has been prepared, it is able to change the plan, based on new data, the results of market trends. The reason for the change of plans can also be the company's due diligence results. If they will be significantly different from those planned, the company may decide to change the company's merger plans, and carry out business acquisitions or refuse all of the transaction.

3. Company due diligence

Due diligence process usually begins after the agreed in principle on the company's acquisitions. But it is essential that the trial takes place before the transaction becomes irreversible.

4. Company valuation

Company's financial data do not indicate the company's management style and sustainability, market trends, quality of work and other things, which is a very significant development in the long run. The company's value is one of the most important indicators of the business of buying / selling case.

5. The decision on the merger or acquisition

Due diligence evaluating data and receiving the company's assessment, it is to decide on the next targets. When the target company has been selected and evaluated, merger or acquisition process is to decide on the transaction price and what kind of payment method you choose – whether payments will be made through its own or borrowed funds cash or shares.

6. The new definition of plans

Author offers company managers (owners) to define the new company's short-term and long-term plans, as well as identify new visions and goals of the company. It is defined by the owners of the company with the mergers and acquisitions process wants to achieve. It is necessary to emphasize the new objectives and growth strategy development phase to predict the company's possible solutions.

7. Integration plan

Several exploration companies in the integration process were able to reduce the period of uncertainty for their employees, customers and suppliers. The second reason for integration planning is to minimize the cost of the integration process, which depends on other factors. The third reason for integration planning is that it should be started as soon as possible to accelerate the return on investment. As the company's acquisition usually requires large investments, the company's owners and managers want the return of capital from investments in the quickest time. Rapid integration is usually a positive impetus to the company's access to finance in the future. The fourth reason is that the company's management should be given considerable time to make business integration. As the company's managers (owners) take the other important strategic decisions, it reduces the management options to address it directly. Thus, over time, less and less resources are devoted to the integration process, because the company activity to continue in line with market trends. The fifth

reason is that from a competition point of view, the integration period shortening reduces the time in which the company is exposed to attack competitors. After acquiring the company's competitors are often used in the integration phase, when the body is confusion about their customers in order to convince some customers to switch to them.

Business integration is an essential part of mergers and acquisitions. It depends on the company's management decisions taken before and during integration, and on how these decisions are implemented.

8. Integration implementation

Integration stage involves a variety of complex situations and organizational changes in the company, which is a temporary situation of instability and uncertainty. This situation affects the stakeholders – business leaders, employees, customers, suppliers. It can interfere with the company's performance. Company's culture is the only one of the factors that affects the company's performance. Assess aspects of the organization (for example, as two competing company employees after the merger will work), or the company's cultural compatibility. This has traditionally been referred to as one of the most typical reasons for mergers and acquisitions is not sufficiently – often after the transaction process is a significant effort to reinvigorate the company, reproduced in the buyer's corporate culture, rather than to create a new culture that would be more appropriate for both companies. Motivate employees to participate in organizational change process, both before and after mergers and acquisitions transaction implementation. Significant organizational changes within the company explained.

Leadership and talent retention are critical HR-related components in post-M&A integration, but the extent to which these factors interact with each other and eventually contribute to the success of post-M&A integration is under-explored (Zhang, Ahammad, Tarba, Cooper, Glaister, Wang, 2015, p. 1021). Despite increasing attention from scholars, only a handful of studies have actually investigated M&A processes (Friedman, Carmeli, Tishler, Shimizu, 2016, p. 2339). Existing studies have suggested the need of effective social cultural integration post acquisition for the success of M&A of culturally distant firms. Existing literature indicates cultural difference between merging organization as one of the factors for the poor performance of M&A (Jha, 2015, p. 25). The positive aspects of cultural differences and suggests that a lot can be gained from dealing with attractive cultures, even when they are different. Managers of acquiring/merging firms can identify whether their employees find the partner's culture desirable, and if they do, proceed with the takeover and then

adopt the partner's organizational routines during post-merger integration (Li, Brodbeck, Shenkar, Ponzi, Fisch, 2017, p. 951).

9. Evaluation of results

In order to assess M&A results are compared company performance before and after mergers and acquisitions transactions. Another comparison is between the company and other similar competitors in the industry, who has not completed a merger in the same period.

Speed of integration is an important success factor for acquisitions (Bauer, King, Matzler, 2016., p. 161). Successful M&A depend on the partners involved in the transaction. Many scholars and practitioners argue that the most difficult to combine the company culture, and these differences are one of the main reasons why many transactions experiencing failure. The author believes that it is important to carefully investigate possible combinations both financially and culturally from an early stage. Business strategic differences can create synergies and improve the competitiveness of the new company. However, the reality is that it is often difficult to predict beyond that specific period of time is necessary in order to achieve good results in the merger at the earliest possible stage. The author emphasizes that the company's success depends on its ability to create added value after the merger has taken place. For this success key author considers the integration process management. Integration main goal is to make more efficient use of existing facilities. The merging company in the integration process is very important to get the maximum benefit from the acquisition. On the one hand, it is necessary for the success of integration on the other hand; the integration will lead to cultural clashes and therefore interfere with the merger.

Conclusions

The company is responsible at the European Commission's position is in unity with the success of the company. If the company's activities comply with the social aspects that contribute to customer requirements, the ability to provide a parallel to the other community members such as employees, suppliers, local communities are respected. This in turn means that a positive force in society can bring direct benefit and ensure long-term competitiveness. Today's requirement is that businesses and organizations need a sane, professional manager. The driver, also a businessman, professional skills not only to work with the company's economic information (financial records, analysis, control, forecasting). The driver must also be able to take decisions in the management of

human resources, which the absence of economic and legal information is also necessary psychological, pedagogical, ethical and social basis. As the surveys show, the acquirer should consider using a consistent and scalable process evaluating such typical risks associated with M&A. This means giving the same meaning checking the legality of reputation as a legal, financial, operational and other traditional credibility check. Move to the next level of due diligence needs to be improved more than replacing the traditional credibility test activities. However, every M&A has its own personality and thus the process of expanding legality may vary depending on the situation.

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THE AUTHORS

Angela Aiello, holds a BA in Political Science and International Relations from the University of Padua and an MA in Interdisciplinary Research and Studies on Eastern Europe from the University of Bologna. Currently, she is working as an intern at the Center for Security Studies in Sarajevo. She previously collaborate with the Center for EU-Russia Studies, University of Tartu, and with the Cold War History Research Center, Corvinus University of Budapest. Her academic interests are mostly related to Russian foreign and security policy, security issues in the post-Soviet space, energy security and transnational threats.

Simona Sglavo, holds a MA in political science from MIREES (Master of Interdisciplinary Research and Studies on Eastern Europe), University of Bologna. She obtained her Bachelor degree at the Università per Stranieri di Siena, Department of Human Science, in 2015. Currently, she is working as an intern at the Eesti Mälu Instituut (Estonian Institute of Historical Memory). She previously collaborated with the Cold War History Research Center, Corvinius University of Budapest. Her academic interests are mostly related to Russian foreign and security policy, security issues in the post-Soviet space, energy security, minority issues, historical memory and information warfare.

Arūnas Molis, holds a BA in political science from Institute of International relations and political science of Vilnius University (VU IIRPS), an MA in European Studies from Hochschule Bremen (University of applied sciences) and an MA in International Business Law from Vytautas Magnus University (Kaunas), as well as a PhD in political sciences from VU IIRPS. He works as professor at Vytautas Magnus University and holds visiting appointments at Bologna University (Italy). His academic interests relate to international and European security, role of energy in international relations, energy resources management, European integration and others.

Viesturs Pauls Karnups, is a Dr. oec., Professor in international economic relations and economic history at the University of Latvia (LU), Business, Management and Economics Faculty, Department of Global Economics Interdisciplinary Studies, and Director of the LU North American Studies Centre. Senior Researcher at the LU Scientific Institute of Economics and Management. Was a Fulbright research scholar in 2008 at Georgetown University, Washington D.C., USA. Has published a large number of articles

on Latvian economic history and international economics. Currently working on Latvian historical national accounts.

Daiga Behmane, Mg. oec., lecturer in Health economics, Health system design, Health technology assessment and Masters' programme director at Riga Stradiņš University. Research areas: competitiveness of the Latvian health sector, health care management and organisation, pharmaceutical policy, experience in public sector administration. Chair of the Association of Health Economics of Latvia.

Anita Villerusa, Dr. med., associate professor in Public health and epidemiology and the Chair of the Scientific Council of the Institute of Public Health at Riga Stradiņš University. She has supervised several doctoral thesis and is the author of many publications in the area of public health, epidemiology, healthy lifestyle, child and adolescent health, health care organisation and health workforce.

Uldis Berkis, PhD in econometrics, associate professor in Health informatics. He has more than 30 publications related to health economics, healthcare sector competitiveness, international trade and health care goods. He has authored two recent books relevant for PhD studies on research methods and open publishing.

Didzis Rūtītis, Dr. sc. admin., is a post-doctoral researcher at the BA School of Business and Finance. Studying product development methods and innovation management within ICT sector companies in Latvia. In addition, actively participating in research of several topics related to health care sector in Latvia and its competitiveness. Has extensive multi-disciplinary expertise and experience from previous professional work and research activities in health care and ICT industries. Member of Software Startup Research Network (SSRN).

Kristine Bokse, Mg. sc. soc. in Work environment expertise. Kristine obtained her master degree and graduated from University of Latvia. She is currently working in occupational health and safety management field and will start her Ph.D. studies related to the current research topic. Kristine is active member of Latvian Ergonomics Society.

Henrijs Kaļķis, PhD in Management Sciences. He hold associate professor position at the Riga Stradiņš University (Latvia) and guest professor position at University of Latvia, as well as he is co-founder and board member of Latvian Ergonomics Society, board member of Business Efficiency association. He has more than 30 publications in Business Management journals, 3 books related to LEAN management, health and safety, ergonomics and human factors.

Ženija Roja, MD, PhD, Associate Professor at the University of Latvia. Zenija Roja is a certified European Ergonomist (Eur. Erg.), delivers lectures on ergonomics, occupational health and workplace health promotion. She specialises in the area of occupational health and load ergonomics and she is an Expert of the Latvian Council of Science in the field of public health. As. Professor Zenija Roja is President of the Latvian Ergonomics Society, and Council Member of International Ergonomics Association and Federation of European Ergonomics Societies. She is author of the several monographs and scientific books in ergonomics and occupational health, author and co-author of more than 150 scientific publications.

Daina Šķiltere, Dr. oec., is a professor at the University of Latvia's Faculty of Business, Management and Economics. The academic and scientific interests of the professor are related to socio-economic analysis and forecasting, mathematical statistics, risk analysis. Daina Šķiltere is an expert in Economics at the Latvian Council of Science, leading researcher at the Institute of Economics and Management. She is the author of many business simulation games, author of forecasting methods, author of textbooks and monographs.

Svetlana Jesiļevska, Dr. oec., is an expert in Economics at the Latvian Council of Science, the author of several scientific publications, books and publications in the mass-media devoted to the methodological aspects of statistics on innovations and problems of the development of innovative companies in Latvia. In 2015, she won a prize for the research of 35 researchers from 27 countries in the study "Iterative method for reducing the impact of outlying data points: Ensuring data quality". In the study, the author addresses the problem of ensuring the completeness of the data, so that they can be used for further processing. Svetlana Jesiļevska is the founder and chairperson of the Board of the Eurointegration and economic development public unit, the State Chancellery's consultant.

Kaspars Mucenieks, Mag. oec., a Doctoral Student at the University of Latvia, Faculty of Business, Management and Economics, Riga, Latvia. Before joining the Doctoral Program at the University of Latvia, he has studied management and finance in BA School of Business and Finance. Director of Development in various active companies based in Latvia.

Zaiga Ozoliņa, Mg. oec., project manager, Kurzeme planning region, Republic of Latvia. She is a doctoral student, obtained the Master degree in Business Management from Riga International School of Economics and Business Administration in 2009. Her research interests are related on mussel marketing approaches and mussel farming in the Baltic Sea Region. She is currently a Project Manager for Kurzeme Planning region of Latvia

and has been managing the Baltic Sea Region project "Baltic Blue Growth" since 2016. Previously she worked in Latvian Environmental Investment Fund as project manager in the Central Baltic Programme project "Baltic EcoMussel".

Biruta Sloka, Dr. oec., professor at the University of Latvia. Has also worked at Aarhus University (Denmark), Dalhousie University (Canada), Oklahoma State University (USA), Agder University (Norway), etc. She has worked at the Ministry of Economics and the Ministry of Education and Science, and has been a coordinator of many international conferences and led several research projects. She is a member of the Association of Latvian Statisticians, Association of Professors of Latvian Higher Education Institutions, Association of Econometrists, and Association of Hydrogen. Research interests are related to marketing research approaches and analysis of obtained data.