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Nord Stream 2: The Expectations of Russian Citizens from Increasing Gas Exports to Europe

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Abstract: Natural gas is one of the key exports of Russia. The country exports gas via pipelines and liquefied natural gas (LNG) via ships. In 2018, the construction of the Nord Stream 2 (NS2) project began and finished in early September 2021, despite all challenges. The purpose of the NS2 is to supply affordable natural gas to European markets while helping them improve energy security, especially for land-locked countries that are ill-suited to receive LNG. The current study aims to gauge the expectations of Russians from the increase in Russian gas exports to Europe resulting from the completion of the NS2. From the literature, some important factors were identified. Primary data was collected from the Russian citizens, and the Grey Relational Analysis model was used to analyze data and rank the key expectations of Russians from the increasing gas supply to the European consumers. The results are interesting and can help the policy-makers know the expectations of the Russian taxpayers.

Keywords: Natural gas exports; Nord Stream 2; European energy security; Russia; grey relational analysis

1. Introduction

The gas industry is strategically important to the Russian economy and largely determines its international specialization. Increased competition in the global gas market, the need for technological modernization of the Russian oil and gas industry, the aggravation of the investment problem, actualize the development of gas exports from Russia to Europe. Russia is a major supplier of natural gas to Europe, primarily Germany. The main supplies are carried out via pipeline gas transmission systems (GTS). Russia, through the GTS, supplied 168 billion cubic meters (bcm) of gas to European countries, including 56.3 bcm to Germany, which amounted to 55.2% of its total pipeline gas imports (Belov, 2021).

The post-Soviet technological breakthrough of the GTS required its significant modernization and renovation to ensure stable exports to Europe - the main Russian gas sales market (Belov, 2018). One of the most important projects became "The Nord Stream" (Alenga, 2021), when experts substantiated the technical feasibility of constructing several parallel pipelines along the bottom of the Baltic Sea. In December 2000, the European Commission recognized it as a part of the trans-European energy network under the TEN-E directive. Scheduled in September 2006, the pipeline received the status of "Project for the Benefit of Europe" (Belov, 2021). Therefore, from the point of view of Brussels, it was initially of key importance for ensuring sustainable

development and energy security of the European Union (Bogaert, 2019). The flawless construction process for "Nord Stream 1" (length 1,224 km, annual capacity 55 bcm), the world's largest offshore export gas pipeline, its successful launch, as well as the continued high demand for gas in Europe motivated the shareholders of Nord Stream AG to make the decision to build the third and fourth lines, which were purchased the status of The Nord Stream 2 project (the feasibility study was prepared in 2011). It was operated by another company, also located in the Swiss Zuge - Nord Stream 2 AG, which began construction work in September 2018 and completed it by 2021 (Statista, 2021a).

Following the completion of the NS2 project, Hungary signed a new contract with Gazprom in September 2021 for a 4.5 bcm gas supply that bypasses Ukraine for 15 years. This agreement came into effect on October 1. It will be possible to change, supplement or extend the contract in ten years (Gazprom, 2021a). Against the backdrop of the contract between Budapest and Gazprom, Kiev allowed a complete stop of gas transit to Hungary through Ukraine (Krasnolutska *et al.*, 2021). In July, 2021, the cost of gas futures on London's ICE Exchange exceeded $500 per 1,000 cubic meters amid growing demand, insufficient supply of LNG and refusal to increase pumped volume through Ukraine by Gazprom. The contract pegged to the gas price of the EU's largest hub TTF reached $501 per 1,000 cubic meters (€40.87 per 1,000 kWh), up 3% per day and 10% from the beginning of the week. EU gas prices are up 150% compared to January and nearly quadrupled compared to last summer's lows. A new round of gas rally started in August 2021, and Gazprom ignored further offers to pass Ukraine again. Currently, the company is pumping 109 million cubic meters (mcm) per day through Ukraine's gas transport system (under long-term contracts) and 15 mcm for unexpected armor. Since the spring 2021, Kiev has been holding auctions regularly, offering to order Gazprom with a transport capacity of more than 60 mcm per day. However, they encountered rejection several times (Udafkovich, 2021).

In the light of the above records, the study makes a pioneering attempt to determine possible risks and benefits of the completed NS2 project for Russian Federation. Therefore, using a multiple attribute decision making approach, Grey Relational Analysis (GRA) Model was used to evaluate the criteria, which are in line with the learning theme, namely Russians` expectations from the increased pipeline gas exports to Europe.

The study organized as follows: after introduction part, section two describes the literature review. The main attention was drawn to the Russian exports through the Nord Stream 2 gas pipeline. Section three describes research methodology, followed by results and discussion section. In the last section, key findings and recommendations for energy markets of Russia are concluded.

2. Background

2.1 Gas network of Russia

Over the past decade, natural gas production in the world has increased by almost 21%, or 640 bcm. At the same time, the world trade of gas increased by 46% and reached 1 trillion 134 bcm (Looney, 2020). Today, the export of gas and oil products through the pipeline is considered the most convenient and economical way of transportation. Pipeline transportation plays an important role in Russia's foreign trade by supplying oil and gas to Western Europe, Turkey, and the countries of Southeast Asia.

Oil and gas exploration in the Soviet/Russian Arctic region began as early as the 1930s, and, at the time, no other Arctic country was exploring hydrocarbons in the area (Kontorovich, 2015). Today, Russia ranks second in the world after the United States in terms of the length of pipelines (GEM, 2021). The length of Russian main gas pipelines is 92,831km (57,683 miles), oil pipelines - 38,419km (23,872 miles). The most important gas pipelines in Russia are Yamal-Europe, Nord Stream 2, and Turkish Stream (Ponomareva *et al.*, 2017). Yamal-Europe Gas Pipeline (1,660 km length with capacity of 90 mcm per day) transports gas from Russia's Yamal Peninsula to European consumers across Russia, Belarus, Poland, and Germany. The Turkish Stream gas pipeline is paved from Russia to Turkey through the Black Sea. The first of the two lines of the gas pipeline is

intended for gas supplies to Turkish consumers, the second - for gas supply to the countries of Southern and Southeastern Europe. The total capacity of the Turkish Stream is 31.5 bcm (15.75 bcm each line). The recently completed NS2 gas pipeline (1,230 km length or 764 miles) is set to run from Ust-Luga in Russia to Greifswald, Germany, and carry 151 mcm of natural gas per day. The pipeline plans to start operations in 2022 (Mohammed, 2021).

2.2 Gas trade between Russia and Europe

In recent five years, the Russian export of natural gas to Western Europe has grown by 40% (Trellevik, 2020). The total consumption of natural gas by European countries in August-September 2021 continued to grow due to increased demand, in particular in Europe, in the context of the onset of the heating season at historically low Underground Gas Storage (UGS) filling levels for the season. The Title Transfer Facility (TTF) index in August 2021 increased by 21.2% versus July 2021 (after + 22.5% in July versus June 2021), the National Balancing Point (NBP) index - by 20.3% (+ 23.7% in July by June 2021). On average, European indices (NBP and TTF) in August were at the level of $ 538.4-545.8 / thousand cubic meters (tcm). Asian LNG prices show similar dynamics of European indicators: in August, the Northeast Asia LNG index increased by 20.4% versus July 2021 (+ 17.5% in July versus June 2021). In the middle of the month, the indices briefly dropped below the $500 tcm due to the false announcement of the launch of NS2, but already on August 31, prices exceeded the $600 tcm, and further growth of quotations did not stop. Prices continue to break historical records: on September 10, the price on the Dutch TTF hub exceeded $700 tcm, on September 14 - $800 tcm. On September 28-29, prices exceeded the mark of $1,000 tcm, and on September 30 they approached $1200 tcm (Perild, 2021). Table 1 shows the Russian gas production statistics.

In September 2021, the growth rate of gas production in Russia accelerated, reaching 11.7% Year-over-year (YoY) (+ 7.4% YoY in August 2021). Due to economic recovery in annual terms internal demand increases (+ 12.0% YoY in August, + 21.5% YoY in September 2021). Moreover, in August 2021, the export of pipeline gas from Russia in physical terms decreased (- 2.4% YoY) for the first time since December 2020, but in value terms increased 3.3 times. Export to non-CIS countries is stable (+ 0.4% YoY), the main consumers - Germany and Turkey - continue to significantly increase imports of Russian gas (+ 32.9% YoY and + 102.8% YoY respectively) (Fedorenko *et al.*, 2021a).

2.3 Key aspects of the Russian gas market

Currently, gas prices in Europe have risen due to Russia's reluctance to increase transit through Ukraine. Russia is determined to switch flows to NS2 as soon as possible and avoids using more expensive routes through Ukraine and Poland (Sziklai *et al.*, 2020). This pushes prices up as demand rises and vaults are emptied. As of June 26, Europe's UGS facilities had 50 bcm of gas, which is 35 billion less than last year and 15 billion less than the average for the last five years. The situation is aggravated by unplanned supply disruptions from the Norwegian "Troll" - a key source of alternative gas for Europe (Carter, 2021). Liquefied gas imports to Europe remain 20% lower than last year, as all free volume is taken by Asia, where quotations are even higher: on the spot market they reach $539 per tcm, while futures for February 2022 are traded at almost $600 (Udafkovich, 2021).

2.3.1 Gas exports from Russia: Russian gas supplies to Gazprom's key customers in the first quarter of 2021 set a 3-year record (Gazprom, 2021b). In three months, Gazprom pumped 52.7 bcm on

Table 1. Gas production in Russia (bcm)

	Sep 2021	**% versus Sep 2020**	**Jan - Sep 2021**	**% versus Jan - Sep 2020**
Production	62.5	11.7	563.7	12.5

Source of data: Fedorenko et al. (2021a)

westward, which is 12.4 billion (30%) more than a year earlier (Gazprom Export, 2021). The export volume fell just slightly below the absolute maximum shown in 2018 - 54.25 bcm (Gazprom, 2018). Germany increased purchases of Russian gas by a third, to 15.54 bcm. Supplies to Turkey soared 106% to 7.76 bcm. Poland has increased imports by 18.5% to 2.45 bcm. Exports to Finland were 67% more than in the first quarter of 2020, to Romania by 90%, Bulgaria by 52%, and Greece by 23%. The main factor that influenced the large-scale withdrawals from UGS facilities this winter was the weather, or rather, the abnormal frosts that hit Europe. Experts from the Skolkovo Energy Center noted that on some days in January and February, over 1 bcm of gas per day were taken from the UGS facility, and on January 15, the fourth daily rate of withdrawal from UGS facilities in Europe was recorded in the history of observations since 2011. In addition, there was a noticeable drop in LNG imports, which poured into Asia, where prices at the moment were rising above $1,000 per tcm. In March, the EU was supplied with 8 bcm of LNG - 20% less than a year earlier and in February. By April, the storage facilities of Europe came up a little more than a quarter full. This means that in the summer, it will be necessary to pump 65-70 bcm of gas (European Commission, 2021). Table 2 shows the export of pipeline gas from Russia from main directions.

In July 2021, pipeline gas exports from Russia (in value terms) increased 3.2 times due to the active growth of global gas prices. The growth rate of pipeline gas exports (in bcm) from Russia accelerated (+ 6.4% YoY in June 2021, + 11.8% YoY in July 2021). The increase in supplies was due to non-CIS countries (+14.8 YoY), especially Turkey (+ 543.2% YoY) and Germany (+ 136.4% YoY). Supplies to Europe continue to reorient from Ukrainian transit (-22.2% YoY) to Nord Stream (+ 7.5% YoY, despite the planned pipeline maintenance from 13 to 23 July), the Yamal-Europe gas pipeline (+ 29.3% YoY), Turkish Stream (+ 46.7% YoY) and Blue Stream (Gazprom, 2021b). In the direction of the near abroad, exports, on the other hand, are slightly decreasing (-1.7% YoY), but the main trading partners within the EAEU - Belarus and Kazakhstan - have maintained a positive trend in gas purchases (Fedorenko *et al.*, 2021b)

2.3.2 Russian gas sales: In 2020, 638.5 bcm of natural gas was produced by Russia, as shown in Figure 1. The volume decreased by approximately 40.5 bcm compared to the previous year. As a result, it was ranked as the world's second-leading producer of natural gas (Statista, 2021b). Gas sales in 2020 brought Russia $ 25.1 billion - at least since 2004 (Milkin, 2021). At the end of 2020, Gazprom pumped 179.3 bcm of gas to non-CIS countries - the minimum volume over the past five years. In physical terms, exports fell by 10%, and in monetary terms - by 40% due to a sharp decline in prices in Europe, which in the spring went below the profitability point of Gazprom (about $ 100 per tcm). At the end of 2020, Russia, for the first time, overtook the United States in the supply of LNG to Europe. It was said that LNG supplies to Europe in 2020 amounted to about 84 million tons, of which 22 million tons were in Russia and 20 million tons in the United States. The export of LNG from Russia in 2020 increased by 4.5% annually to 68.3 mcm. Revenues from its sale amounted to $ 6.75 billion, which is 15% lower than in the same period in 2019. The largest LNG producer in Russia - Yamal LNG - exported 18.3 million tons (40.8 mcm) in 2020 (Yermakov, 2021). "Gazprom" exported 7 million tons of LNG in 2020 and plans to more than double this figure by 2025 (Sokolov, 2021).

2.4 Assessment of Russian gas export potential

Production dynamics are not the same across companies. Independent producers (e.g., NOVATEK, oil companies, etc.) may gradually oust Gazprom from the internal market (e.g., by lowering gas prices). One of the reasons for the stability of these dynamics is that Gazprom pays more attention to maintaining gas exports, while independent producers are unable to export the gas they produce and are forced to operate only on the domestic market. Undoubtedly, the isolation of gas producers independent from foreign markets, with their growing influence on the domestic market, will create pressure on the state to give independent producers the right to export their gas to foreign markets (Evseeva, 2018).

Table 2. Export of pipeline gas from Russia by main directions (bcm)

	Jul 2021	**% versus Jul 2020**	**Jan - Jul 2021**	**% versus Jan - Jul 2020**
Total	14.2	+11.8	118.9	+11.4
Far-abroad countries	12	+14.8	98.5	+13.3
Commonwealth of Independent States (CIS)	2.3	-1.7	20.4	+3.0

Source of data: Fedorenko et al. (2021b)

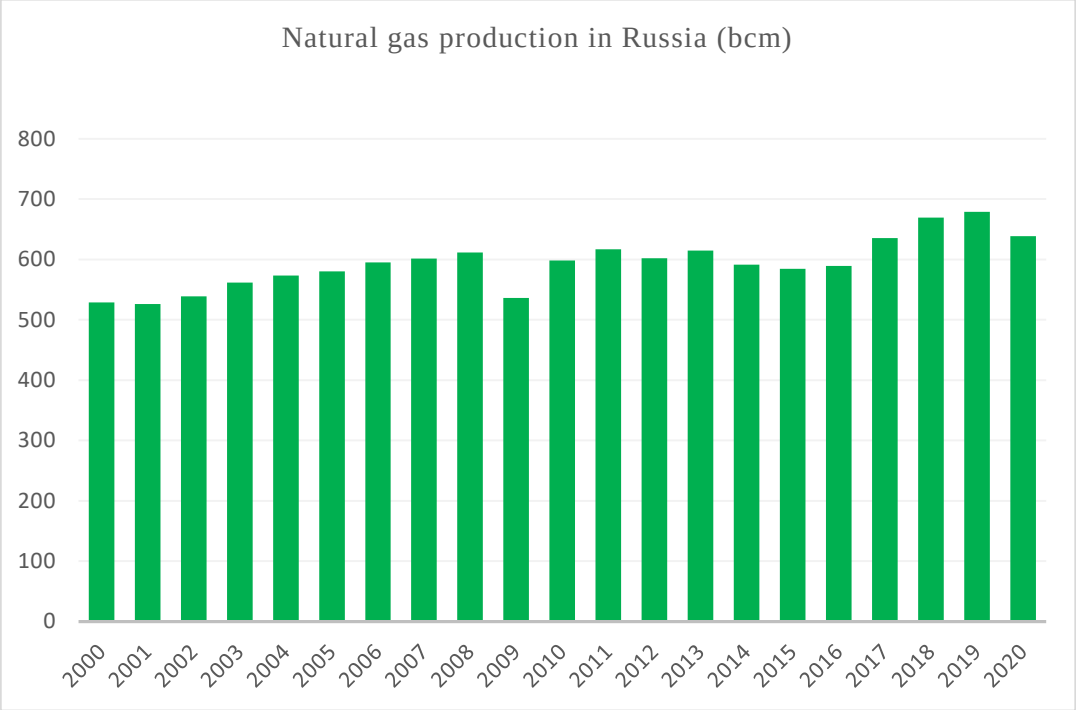

Figure 1. Natural gas production in Russia from 2000 to 2020 (bcm) (*Source of data*: Statista, 2021b)

The entry of independent producers into foreign markets will increase the export potential of Russian gas. However, it will only be realized if suitable markets are found. With the growing difficulties in selling Russian gas in foreign markets, both Gazprom and independent gas producers will have to look for new opportunities for gas sales in the domestic markets of Russia. One of them is to increase the gasification of agents operating in Russia. The level of gasification is about 60% (Evseeva, 2018). It can be increased because of the cold climate of Russia. As for the directions of export, experts consider three main directions: the near abroad, the European market (far abroad), and the Asian direction. Demand in the near abroad is decreasing, primarily due to Ukraine (previously, Ukraine consumed 54% of exported Russian gas) (Stepanyan *et al.*, 2021). Ukraine can do without Russian gas, since they will use reverse supplies from Poland, Hungary, Croatia. The question is, are they a sign of a decline in demand for Russian gas as a result of Poland, Hungary and Croatia re-exporting Russian gas to Ukraine? Or will these countries receive gas from non-Russian gas fields? It remains unclear, since this issue was not covered in any reports. For the short term, a decrease in Russian gas exports to the near-abroad countries is quite likely, since a lot of gas has been accumulated in the gas storage facilities of Ukraine. Therefore, the Ukrainian market will not take gas in the same volumes (Krutikhin, 2016). And the main consumer of exported Russian gas has been and remains the European market (Goldthau, 2016). Thus, a system of gas pipelines (e.g., Nord Stream 2) has been built from the main regions of gas production in Russia to serve this market. Long-term contracts have been signed with participants in this market (Herrera & Cunha, 2021).

3. Research methodology

3.1 The research instrument

In terms of the recently completed NS2 project, ten possible factors/criteria (C) were identified from the literature. These factors and their description is reported in Table 3. The questionnaire had two parts – the first was demographic, and the second was about the perception of the respondents about these factors. The questions were like this, "Do you think the completion of Nord Stream 2 will improve the resilience of the Russian Economy?". The complete questionnaire can be obtained from the corresponding author at a reasonable request.

Table 3. The factors

Code	Criteria/factors	Description	Literature
C_1	Increase of "GDP per capita" in Russia	-The outstripping growth of exports (106.3%) over imports (103.8%). -Increase in the share of net exports of goods and services in the structure of GDP compared to 2017.	RIA News (2020)
C_2	Improvement in bilateral relationships between Russia and the Western Europe	-Extension of the gas supply contract with the Austrian gas company OMV until 2040 -Italy is negotiating diversification supplies of Russian gas. "Gazprom" and "Edison S.p.A." signed an agreement on cooperation within the southern route of Russian gas supplies to Europe.	Schmidt-Felzmann (2018)
C_3	Improvement of living standard in Russia	-The average household net-adjusted disposable income per capita in the second quarter of 2021 increased by 6.8%. -The development of relations with European countries will have a beneficial effect on tourism for Russians.	Gazprom (2021c)
C_4	Stabilization of the gas prices in Russian market	-Gas prices have remained relatively stable throughout 2021. By early July 2021, the price has risen by 3%.	Rambler (2021)
C_5	Improvement of the resilience of Russian Economy	- "The Nord Stream 2" will improve the position of Russian business. - "Gazprom" makes profits, creates jobs and pays taxes on an increased scale.	Lebedev (2020)
C_6	Increase of the gas production in Russia	- Gas production in Russia increased by more than 11% in 10 months of 2021.	AK&M (2021)
C_7	Increase in demand for Russian gas in Europe	-Export of pipeline gas from Russia (in value terms) increased by 3.2 times. -The launch of "The Nord Stream 2", even with a large supply of LNG on the EU market, will help reduce gas prices for European consumers by 13%	RIA News (2021)
C_8	Increase of the market share of Russian gas in Europe	-The share of Russian gas in the EU market has grown by several percentage points to about 45%. - "Gazprom's" share in the EU market reached 36.7%	Interfax (2019)
C_9	Increase of the economic burden on Russian citizens (e.g., through the increment in the Value Added Tax (VAT))	-The measure is aimed to attract additional funds to the budget for the implementation of the May decrees.	TACC (2018)
C_{10}	Increase of Russia's political influence in Europe	-The completion of "The Nord Stream 2" project provides new opportunities for the development of economic relations between Russia and the EU.	Soldatkin et al. (2021)

3.2 Data collection

This study collected data through an online questionnaire, which was designed on *QuestionPro*. The target sample was Russian residents who were asked to evaluate possible benefits and risks from increased exports of Russian natural gas to Europe due to the completed NS2 project. 44 people were approached, and 18 properly filled questionnaires were obtained. Hence, the sample size was 18. Most of the respondents were aged 25 to 54, with more than one year of experience. Data were collected on a 7-point Likert scale, where "7" represents high priority ("strongly agree") and "1" represents low priority ("strongly disagree"). The questions were designed in a way that all questions (factors) had higher the better characteristic. Thus, to run the GRA model, an ideal data sequence would be of the form {7, 7, …, 7}. Microsoft Excel was utilized for data analysis through the GRA model, which will be discussed in the subsequent section. The demographic profile of the respondents is presented in Table 4.

3.3 Grey Relational Analysis model

The Chinese professor Julong Deng proposed the Grey System Theory in the 1980s (Julong, 1989). Since then, it has seen application in various fields, such as Supply Chain Management (Diba & Xie, 2019; Bai & Sarkis, 2018), Sustainable Development (Ikram *et al.*, 2019; 2020), Project Management (Mahmoudi *et al.*, 2021a; 2021b), Energy and Emissions (Javed *et al.*, 2020; Javed & Cudjoe, 2022). Grey system theory concerns a system whose information is partially known and partially unknown, in other words, with an incomplete description. Grey Relational Analysis is an important part of the grey system theory. It captures the relationship between the main factor and other auxiliary factors. In the comparison process, the reference sequence is related to the sequences being compared, which show some degree of similarity to the reference model and thus determine the best one. The GRA model can be executed as follows (Mahmoudi *et al.*, 2020; Liu *et al.*, 2017).

Table 4. Demographic information of the respondents

Characteristic	Demographic Characteristics	Number	%
Latest Education	High school	6	33
	Diploma	4	22
	Bachelor	4	22
	Master	1	6
	Doctoral degree	2	11
	N/A	1	6
Work Experience	< 1 year	4	22
	1-2 years	2	11
	3-5 years	3	17
	6-7 years	4	22
	>7 years	5	28
Age	18-24	3	17
	25-34	5	28
	35-44	4	22
	45-54	5	28
	>54	1	6
Gender	Male	8	44
	Female	4	22
	Not mentioned	6	33

Let the ideal sequence is $x_0 = \{x_0(1), x_0(2), \ldots, x_0(n)\}$, and the reference sequence is $x_i = \{x_i(1), x_i(2), \ldots, x_i(n)\}, i = 1,2, \ldots m$, where m is the total number of factor being evaluated. The GRA model is recognized through its Grey Relational Grade, given by:

$$\gamma(x_0, x_i) = \frac{1}{n}\sum_{k=1}^{n} \gamma\big(x_0(k), x_i(k)\big) \quad (1)$$

where,

$$\gamma\big(x_0(k), x_i(k)\big) = \frac{min_0 min_i |x_0(k) - x_i(k)| + \xi max_0 max_i |x_0(k) - x_i(k)|}{|x_0(k) - x_i(k)| + \xi max_0 max_i |x_0(k) - x_i(k)|} \quad (2)$$

and $\xi \epsilon (0,1]$ is the distinguishing coefficient. Scholars frequently assume its value to be 0.5. Here, $\gamma\big(x_0(k), x_i(k)\big)$ is called the Grey Relational Coefficient (GRC) at point *k*, and GRG shows the closeness between x_0 and x_i. GRA allows us to understand which factors are critical in the system. For further details on GRA, Kuo *et al.* (2008) and Mahmoudi *et al.* (2020) can be referred.

4. Results and discussion

After collecting data, the analysis was performed using Deng's GRA model as it is a convenient tool to evaluate factors even when the sample size is small. The raw data obtained from eighteen respondents about the ten factors is shown in Table 5. The Grey Relational Coefficients and Grey Relational Grades are shown in Tables 6 and 7, respectively. In the tables, "C" deputizes criteria/factors, and "A" deputizes respondents. Figure 2 illustrates the GRG and Ranks of the criteria.

After analyzing respondents` opinions, results showed that all expectations have some potential. However, the current study discovered that among all determined alternatives Improvement in bilateral relationships between Russia and Western Europe (C2) gets the highest order relative weight, means selected to be the most critical expectation from the increase in Russian gas exports to Europe by the completion of the NS2 project, while the increase of the economic burden on Russian citizens (e.g., through the increment in the Value Added Tax (VAT)) (C9) gets the lowest. It is followed by Increase of the market share of Russian gas in Europe (C8), Improvement in living standard in Russia (C3), Increase in demand for Russian gas in Europe (C7), Increase in the gas production in Russia (C6), Increase of Russia's political influence in Europe (C10), Increase of "GDP per capita" in Russia (C1), Stabilization of the gas prices in the Russian market (C4), Improvement of the resilience of Russian Economy, (C5).

Most of the respondents believe that the completion of NS2 will improve bilateral relationships between Russia and Western Europe (C2). Now, NS2 is not just a Russian-German project, but a Russian-European project, since Germany is becoming the main transit country for Europe,

Table 5. The response sheet containing original data

	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}	A_{17}	A_{18}
C_1	2	4	6	2	3	3	4	5	3	5	7	2	2	2	7	1	5	7
C_2	3	3	7	3	3	3	3	6	6	2	5	4	6	6	7	4	3	6
C_3	7	7	4	2	5	1	5	1	6	5	5	3	7	6	4	3	6	1
C_4	1	1	4	3	7	2	6	3	3	3	6	4	2	7	3	4	4	4
C_5	1	4	1	2	5	2	3	2	3	7	6	1	7	6	4	1	5	1
C_6	2	5	4	2	6	2	3	4	5	7	3	5	2	6	3	1	7	4
C_7	3	5	4	1	2	5	1	7	6	4	2	4	3	7	7	6	1	5
C_8	3	4	2	3	2	4	7	6	3	7	7	2	7	4	1	6	6	2
C_9	2	5	1	4	4	5	1	4	3	5	1	2	2	3	7	3	1	2
C_{10}	7	4	7	2	1	2	3	1	1	5	6	5	1	5	6	3	2	6

Table 6. Grey Relational Coefficients

	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	A_{11}	A_{12}	A_{13}	A_{14}	A_{15}	A_{16}	A_{17}	A_{18}
C_1	0.44	0.57	0.80	0.66	0.49	0.66	0.57	0.66	0.57	0.66	1.00	0.57	0.44	0.44	1.00	0.44	0.66	1.00
C_2	0.49	0.49	1.00	0.80	0.49	0.66	0.49	0.80	1.00	0.44	0.66	0.80	0.80	0.80	1.00	0.66	0.49	0.80
C_3	1.00	1.00	0.57	0.66	0.66	0.49	0.66	0.39	1.00	0.66	0.66	0.66	1.00	0.80	0.57	0.57	0.80	0.39
C_4	0.39	0.39	0.57	0.80	1.00	0.57	0.80	0.49	0.57	0.49	0.80	0.80	0.44	1.00	0.49	0.66	0.57	0.57
C_5	0.39	0.57	0.39	0.66	0.66	0.57	0.49	0.44	0.57	1.00	0.80	0.49	1.00	0.80	0.57	0.44	0.66	0.39
C_6	0.44	0.66	0.57	0.66	0.80	0.57	0.49	0.57	0.80	1.00	0.49	1.00	0.44	0.80	0.49	0.44	1.00	0.57
C_7	0.49	0.66	0.57	0.57	0.44	1.00	0.39	1.00	1.00	0.57	0.44	0.80	0.49	1.00	1.00	1.00	0.39	0.66
C_8	0.49	0.57	0.44	0.80	0.44	0.80	1.00	0.80	0.57	1.00	1.00	0.57	1.00	0.57	0.39	1.00	0.80	0.44
C_9	0.44	0.66	0.39	1.00	0.57	1.00	0.39	0.57	0.57	0.66	0.39	0.57	0.44	0.49	1.00	0.57	0.39	0.44
C_{10}	1.00	0.57	1.00	0.66	0.39	0.57	0.49	0.39	0.44	0.66	0.80	1.00	0.39	0.66	0.80	0.57	0.44	0.80

Table 7. Grey Relational Grades and ranks

Code	Criteria	GRG	Rank
C_2	Improvement in bilateral relationships between Russia and Western Europe	0.7036	1
C_8	Increase of the market share of Russian gas in Europe	0.7026	2
C_3	Improvement in living standard in Russia	0.6964	3
C_7	Increase in demand for Russian gas in Europe	0.6925	4
C_6	Increase of the gas production in Russia	0.6537	5
C_{10}	Increase of Russia's political influence in Europe	0.6455	6
C_1	Increase of GDP per capita in Russia	0.6449	7
C_4	Stabilization of the gas prices in Russian market	0.6321	8
C_5	Improvement of the resilience of Russian Economy	0.6045	9
C_9	Increase of the economic burden on Russian citizens (e.g., through the increment in the Value Added Tax)	0.5851	10

through which other countries (e.g., Italy, France, Finland, etc.) will begin to receive gas. As long as Russia is the main European gas supplier, Russian natural gas and LNG exports have grown significantly, thereby increasing the share of Russian gas in the EU market. This explains why the increase of the market share of Russian gas in Europe (C8) was ranked second most practicable expectation. In addition, the export of natural resources is the main source of Russian income. Part of the income is spent on pensions, social benefits, and subsidies. Plus, the construction of schools, hospitals, and roads is also funded by the state budget. For this reason, the respondents could define improving living standards in Russia (C3) as the third eventual expectation. The study also revealed that the increase in Russian gas exports to Europe would have the least impact on the increase of the economic burden on Russian citizens (e.g., through the increment in the VAT) (C9). However, with the launch of NS2, export gas prices at European hubs might begin to fall, and it will become less profitable to export gas on external markets, which can economically encumber Russian citizens. Overall, the results are realistic and convincing.

5. Conclusion

The Nord Stream 2 pipeline, just like the existing one (Nord Stream 1), is likely to establish a direct connection between Gazprom and European consumers while warranting high reliability of Russian gas supplies to Europe. This is particularly significant, especially if one notes the falling gas production in Europe and increasing demand for its imports. Furthermore, the NS2 is pivotal for Russia as its launch would improve the stature of Russian businesses and the nation. The

Figure 2. Grey Relational Grades based ranking fo the ten expectations.

current study employs the Grey Relational Analysis model to identify the key expectations of Russians from the increased supplies of Russian natural gas to Europe following the completion of the NS2. Based on the results and discussion, the increase in Russian gas exports to Europe shows that the most critical expectation is improving bilateral relationships between Russia and Western Europe. The results will likely benefit Russian public and parties involved in projecting the NS2 gas pipeline. Besides, the results are valuable for economic and energy policy-makers while helping them know the viewpoint of the masses.

Prospects for further gas cooperation between Russia and European countries will depend on the formation of a favorable investment climate, technological interaction between the parties, as well as the diversification of routes delivery of natural gas to European countries. The priority task is to develop full-fledged cooperation with all importing countries of Russian gas and, of course, with the European Union as Russia's most important strategic partner. In addition, Gazprom should flexibly adapt to the new pricing system to maintain current export volumes. In the case of low demand and oversupply, it is inevitable price wars. However, it is possible to maintain its market share in Europe only by offering lower prices. For new markets, some discounts can be offered. When the market is oversaturated, many companies are ready to sell gas at prices that cover current rather than long-term costs. Also, because of the opposition of the United States, the world's third-largest LNG exporter, the NS2 project is as much about energy as geopolitics and competition. Thus, lessons should be learned from China's Belt and Road Initiative, so the project achieves targets despite all frictions.

The study involved a small sample size. Thus, findings should be generalized with caution. A larger sample size encompassing greater diversity can be considered in the future. Also, new factors can be added to the framework. Meanwhile, to what extent the government and its policy-makers would meet the expectations of the Russian citizens and what value the project would add to the relationship between Russia and Europe is yet to be seen.

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