Environmental digital conflicts: Spanish-, german-, and russian-speaking actors

Conflictos ambientales en las redes sociales: Actores del habla hispana, germana y rusa

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ABSTRACT
Introduction. Almost all significant social communications are moving to virtual spaces. Thus, environmental conflicts play an increasingly important role in public life, as civic activity in solving environmental problems grows. The development of eco-territorial conflicts and requests for their social reactions lead to the emergence of digital conflict zones, sectors of the media space in which the current environmental agenda is discussed by a wide range of users. The analysis of conflicts in the digital environment is truly relevant and can be performed using neural network technologies. **Methodology.** Big data obtained from social media has become an important source of analysis of social processes, behavioral characteristics, speech perception, society's assessment of events and phenomena. The goal of the work was to determine the specifics of perception in the media space of environmental conflicts in urban planning and construction. To analyze digital content, a multimodal approach was used along with neural network technologies, text analysis, sentiment analysis, analysis of word associations. The research data was collected using Brand Analytics and the corpus Sketch Engine. Content analysis was carried out using the multilingual technology of neural networks TextAnalyst 2.3 and visual analysis using the Tableau platform. **Results and Conclusions.** The study made it possible to identify common and different features of the development of digital conflict zones related to environmental problems in the Spanish-, German- and Russian-language media spaces.

RESUMEN

Introducción. Casi todas las comunicaciones sociales importantes se están trasladando a espacios virtuales. Se puede observar que los conflictos ambientales juegan un papel cada vez más importante en la vida pública, a medida que crece la actividad cívica en la resolución de problemas ambientales. El desarrollo de conflictos eco-territoriales y las reacciones sociales conducen al surgimiento de zonas de conflicto digital, sectores de espacio mediático en los que la actual agenda ambiental es discutida por un amplio abanico de usuarios. El análisis de conflictos en el entorno digital es muy importante y se puede realizar utilizando tecnologías de redes neuronales. **Metodología.** Los macrodatos obtenidos de las redes sociales se han convertido en una fuente importante de análisis de los procesos sociales, las características del comportamiento, la percepción del habla, la evaluación de la sociedad de eventos y fenómenos. El propósito del trabajo fue determinar las especificidades de percepción en el espacio mediático de los conflictos ambientales en la planificación y construcción urbanas. Para analizar el contenido digital, se utilizó un enfoque multimodal junto con tecnologías de redes neuronales, análisis de texto, análisis de sentimientos, análisis de asociaciones de palabras. Los datos de la investigación se recopilaron utilizando *Brand Analytics* y el corpus *Sketch Engine*. El análisis de contenido se llevó a cabo utilizando la tecnología multilingüe de redes neuronales TextAnalyst 2.3. y análisis visual con la plataforma Tableau. **Resultados y conclusiones.** Como resultado del estudio, se identificaron signos comunes y diferentes del desarrollo de zonas de conflicto digital relacionadas con problemas ambientales en el espacio mediático de habla española, alemana y rusa.

PALABRAS CLAVE: comunicación digital; ecología; percepción del habla; tecnologías de redes neuronales; zonas de conflictos digitales.

CONTENT

1. Introduction

Digital communications take important place in the communication of people; almost all events significant for society are transferred to virtual spaces. In particular, environmental conflicts play an increasing role in public life, and the role of civil activism in solving environmental problems is growing. The development of eco-territorial conflicts and requests for social answers to the environmental question leads to the emergence of digital conflict zones - sectors of the media space in which the current environmental agenda is discussed by a wide range of users.

The transfer to the web environment is caused by the radicalization of the ecological issue as a key social problem of our time, which leads to the generation of territorial and socio-ecological conflicts, a shift in ecological thinking. Cities are playing a key role in the rapid growth of carbon footprints due to the expansion of industry and transport networks and the heating process in urban environments (Davis, 2010). A new urban culture is formed - the eco-ethics of citizens, when big-city residents most actively respond to environmental problems and disasters (Raskhodchikov &

Pilgun, 2020). It is no coincidence that researchers emphasize the need for interdisciplinary approaches to solving environmental problems, synergy of nature and culture (Schwarz & Jax, 2011).

Attention to environmental problems leads to their multifaceted study, for example, a comprehensive analysis of the scientific and engineering foundations of the Earth's systemic ecology is presented (Leemans, 2013), environmental participation, including various types of practices: public participation especially in the field of environmental science, decision-making, and expertise (Landström, 2020), a political economy approach to contemporary environmental crises (Craig, 2017; Leff, 2021), etc. Thus, the range of environmental problems has expanded significantly, since the importance of environmental issues for modern society increased.

Meanwhile, in the modern world, social interaction becomes dependent from communication in social networks (Bronstein et al., 2019; Chung & Zeng, 2018; Lutzke et al., 2019; etc.). Thus, a new method for studying the evolution of social structures - multiplex community affiliation clustering - has been successfully used to study the influence of online social networks on the evolution of actors' connections in real life, the interdependence of the state of virtual communities and content (Weaver et al., 2018).

Analysis of conflicts in the digital environment is also an urgent task and is carried out using various approaches using text mining, machine learning and agent-based modeling (Deutschmann, Lorenz, Nardin, Natalini & Wilhelm 2020). Social media data is becoming an important source in the analysis of social processes, models of automatic extraction of behavioral characteristics, citizens' perception of certain events and phenomena, since they allow real-time research on large data sets (Kullkarni, 2018).

The goal of the work was to determine the specifics of the perception in the media space of environmental conflicts in urban planning and construction, as well as the features of the development of digital conflict zones related to environmental problems in the Spanish, German and Russian-speaking media spaces.

2. Methodolody

The study involved a cross-disciplinary approach. To content interpretation involved neural network text analysis, content analysis, sentiment analysis and analysis of lexical associations.

This made it possible to identify and analyze the topic structure of the consolidated database and the semantic network obtained as a result of the analysis of the text as its semantic portrait; an associative search was also performed (see Kharlamov & Pilgun, 2020).

The problems of linguistic representations in artificial neural networks have received wide coverage in research in recent years. For example, learning reduplication using a variable-free neural network (Brandon, Traylor & Pater, 2019); ensuring convergence of deep learning and linguistic techniques (Linzen, 2019: 108). Joe Pater claims that generative linguistics is unlikely to develop effectively if it continues to stand aback from neural and statistical approaches to learning (Pater, 2019: 40).

2.1. Tools

Corpus Sketch Engine was used as a tool for data collection in the Spanish-speaking and German-speaking digital environment. Sketch Engine algorithms analyze authentic texts of billions of words

(text corpora) to identify instantly what is typical in language and what is of rare, unusual or emerging usage. Sketch Engine is also designed for text analysis or text mining applications (https://www.sketchengine.eu/).

BrandAnalytics social media monitoring and analysis system was used as a tool for data collection in the Russian-speaking digital environment. BrandAnalytics allowed collection of data in the Russian-language information field with the best completeness and quality from all sources - social networks, video hosting sites, map services, public channels and messenger chats, reviewers, forums, blogs, marketplaces, online media, newspapers, magazines and federal TV channels.

Neural network text analysis, content analysis, sentiment analysis and analysis of lexical associations was performed using the TextAnalyst technology.

For visual analytics, the Tableau platform was used.

2.2. Data

The empirical basis of the study was data from social networks, microblogging, blogs, instant messengers, forums, reviews, videos on the construction of urban development projects that caused environmental problems in Spain, Germany and Russia. from the material was collected between 01.01.2019 and 09.20.2020.

The Spanish-language dataset is content related to the construction of Hotel Algarrobico, Almeria; its volume includes 4,889,726 characters (Fig. 1). The construction of this facility began in 2003 right on the beach line on the territory of the reserve, in violation of all environmental protection standards.

Figure 1. *Hotel Algarrobico, Almeria, Spain (Fig. 1)*
Fuente: https://www.eldiario.es/andalucia/enclave_rural/medio_ambiente/hotel-algarrobico-simbolo-destruccion-costa_1_2825446.html)

The German-language dataset is dedicated to the implementation of a road and urban development project for the reorganization of the Stuttgart railway junction; its volume includes 7,172,020 characters (Fig. 2). The construction work under this project began in 2010 and was scheduled for completion in 2019, but has been postponed due to many factors; one of them being environmental damage and the complication of its project that is difficult to implement.

Figure 2. *Stuttgart 21 (also abbreviated as S 21)*
Fuente: https://www. mimarimedya.com

The Russian-language dataset is dedicated to construction of the North East Chord of Moscow; its volume includes 13,782,550 characters (Fig. 3). The North East Chord is a new highway that will connect three districts of the capital: north, east and southeast. The road 106 km long will run from the new M11 Moscow - St. Petersburg highway to the Kosinskaya ramp (the Moscow Ring Road interchange with the Veshnyaki - Lyubertsy highway) and will connect major highways - Izmailovskoe, Shchelkovskoe, Dmitrovskoe, Altufevskoe and Otkrytoye high road.

Figure 3. *North East Chord of Moscow (stroi.mos.ru)*

3. Results

The rating of resources in various national media spaces differs; meanwhile, it should be noted that the importance of virtual communications in all segments of the Internet is growing. In Spain and Germany, the first two positions are occupied by Google.com and YouTube, which also lead the global rankings. In the Russian media space, national resources are leading - the search engine and Internet portal Yandex.ru and the social network VKontakte. Google.com and YouTube are ranked 3rd and 4th respectively. Facebook holds the 3rd place in the world rankings and in the Spanish media space; while among the Germans it takes only 5th place, and 10th among the Russians–. Twitter, which occupies the 4th line in the world ranking, gets the 5th position among Spanish users, and is not in the top 10 of digital platforms in the German and Russian Internet segments. Instagram is ranked 7th for Spanish users, 8th for Russian users and 10th for German users (with 5th position in the global ranking). It should be concluded that according to Similarweb, the preferences of Spanish users are more consistent with global trends and to a lesser extent with the preferences of German actors, while Russian users have completely different, specific preferences and are primarily focused on their own resources (see Fig. 4, 5, 6, 7).

Figure 4. *Top 10 websites in the world*
(December 2020, www.similarweb.com)

Figure 5. *Top 10 Websites in Spain* (December 2020, www.similarweb.com)

Figure 6. *Top 10 Websites in Germany*
(December 2020, www.similarweb.com)

Figure 7. *Top 10 Websites in Russia*
((December 2020, www.similarweb.com)

3.1. Spanish-language media space

3.1.1. General characteristics

Of 700 various media resources of the Spanish media space, it can be noted that in the first place in the generation of content on the topic of Hotel Algarrobico are articles from newspapers (53%), 20% of blogs and private sites, 13% of Greenpeace sites, 9% of provincial and institutional sites, 2,5% of wiki sites, 1% of YouTube sites and 1% of social media, among other sources. Thus, public opinion is mostly formed and published on the pages of newspapers and are openly discussed there, as well as in blogs.

3.1.2. Topic structure

The focal points of the topic structure are:

- protests and outrage at the illegal construction in a conservation area, right on the beach of the hotel
- indignation of Spanish activists and Greenpeace representatives with the illegal construction of a hotel in a conservation area, on the very shore of the beach,
- protests of activists against the construction;
- dissatisfaction with the actions of the authorities,
- demands to demolish the hotel,
- requirements to comply with environmental protection regulations,
- requirements to ensure compliance with the urbanization law (Fig. 8).
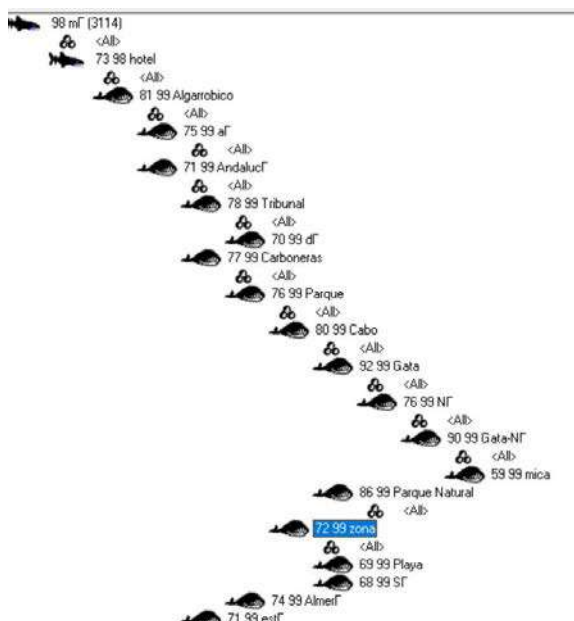
Figure 8. *Topic structure [1].*

Examples of content with maximum link weights:

RECUERDOS QUE JAMÁS SE BORRARÁN Recomposición de la canción Mediterráneo de Joan Manuel Serrat tras una épica acción sobre el Hotel Ilegal El Algarrobico, en el Parque Natural del Cabo de Gata (Almería), el máximo exponente de todas las ilegalidades en la destrucción de la costa mediterránea española. La acción comenzó al amanecer y 20 activistas desembarcamos del Rainbow Warrior II para entrar en el hotel en construcción y realizar una gran pintada de HOTEL ILEGAL en su fachada principal. Y qué le voy a hacer si yo, defiendo el Mediterráneo defiendo el Mediterráneo. Además, aquí tenéis un link de Raúl en el que habla sobre estas vivencias e interpreta fantásticamente el trocito de versioneado que hicimos https://www.youtube.com/watch?Sesenta activistas del grupo ecologista protestan contra la "pasividad" del Ministerio de Medio Ambiente ante el cierre del complejo en el parque natural de Cabo de Gata.- Azata del Sol

A pesar de las sentencias que declaran ilegal la construcción, el hotel sigue en pie. La promotora del edificio trasladó el pasado mes de febrero un escrito al Tribunal Superior de Justicia de Andalucía (TSJA) en el que asegura que la licencia municipal de obras que se le concedió en 2003 para edificarlo «sigue en vigor» conforme tanto a la normativa urbanística como al planteamiento vigente, por lo que «no puede ser demolido». https://www.abc.es/viajar/alojamientos/abci-sigue-algarrobico-hotel-fantasma-cabo-gata-nijar-201908270128_noticia.html

3.1.3. Semantic network

The semantic network is based on such concepts as administration, coastline, illegal urbanization by the construction company Azata del Sol, destruction of natural environment, litigation, tribunal, Europe, demolition, expropriation (Appendix 1).

3.1.4. Semantic core

The core of the semantic network of content dedicated to topics of the Algarrobico hotel is presented below (Fig. 9).
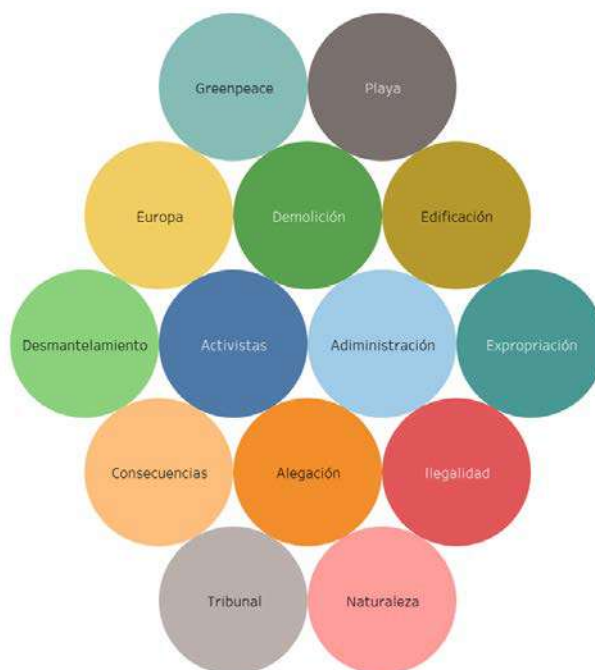
Figure 9. *Core of the semantic network*

Contexts are as follows:

</p> <p> El Tribunal Supremo (TS) va a fallar sobre si el suelo sobre el que se asienta el hotel de Azata del Sol en el paraje de El Algarrobico, en Carboneras (Almería) es no urbanizable de especial protección. </p> <p>

Los jueces acusados declararon urbanizables los suelos del hotel en 2014, en contradicción con un fallo de 2012. </p> <p> Salvador Hernández pide que le digan "de una vez" si se celebrará la apertura del hotel o por el contrario habrá que demolerlo. </p> <p>

La Fiscalía Superior de Andalucía ha abierto diligencias de investigación penal tras el escrito presentado por Greenpeace para investigar la sentencia dictada por el Tribunal Superior de Justicia de Andalucía (TSJA) el pasado 21 de marzo en la que se declaraba el paraje de El Algarrobico "urbanizable". </p> <p>

El objetivo de esta acción es recordar a los responsables políticos la ilegalidad de dicho edificio, declarado ilegal por el Tribunal Superior de Justicia de Andalucía (TSJA) por su incumplimiento absoluto de la Ley de Costas. </p> <p>

El Ministerio Público, que, en concreto, se ha adherido como ya hizo en reforma al recurso de apelación a la Audiencia Provincial del colectivo contra el auto del Juzgado de Instrucción 1 de Vera que propuso que los activistas fueran a juicio, sostiene, en esta línea, que no ha quedado "debidamente justificada" la perpetración del delito, según han informado a Europa Press fuentes judiciales. </p> <p>

3.1.5. Key topics

The key topics of the Algarrobico hotel corpus were illegality (ilegalidad), urbanization (urbanizable), beach (playa), nature reserve (parque natural), Greenpeace, negative consequences (efectos negativos), demands for hotel demolitions, environmental protection and damages.

Contexts are as follows:
En este sentido, Greenpeace insta a los Gobiernos central y autonómico a ejecutar en protocolo de colaboración firmado. </p> <p> Sobre la sentencia del Tribunal Superior de Justicia de Andalucía (TSJA) que declara urbanizable el suelo sobre el que se asienta el hotel, los manifestantes afirman que esta resolución "no hace más que enmarañar el caso y dar tiempo a las administraciones para no hacer cumplir la ley". </p> <p>

El director de Greenpeace España, Mario Rodríguez, ha afirmado que "las dos administraciones no necesitan ninguna sentencia más: existe un hotel que invade una playa y un parque natural protegido internacionalmente, y lo único que deben hacer es cumplir la ley". </p> <p>

Pero al tomar la última curva e iniciar el descenso de los acantilados, cuando las vistas se abren al mar y esperas que aparezca un paisaje paradisíaco, lo que te recibe es una de las mayores aberraciones urbanísticas perpetradas en nuestro litoral: el famoso hotel ilegal de El Algarrobico, la mayor reliquia de los años del pelotazo. </p> <p>

Greenpeace termina de pintar el punto negro en el hotel Algarrobico </p> <p> Un centenar de activistas vuelve a reclamar la demolición de las instalaciones </p> <p> Un centenar de activistas de Greenpeace han terminado hoy de pintar de negro un enorme punto negro en la fachada del hotel de El Algarrobico, en Almería. Es la segunda acción de estas características y la sexta en el inmueble de 21 plantas y 411 habitaciones, donde ya pintaron las palabras "hotel ilegal" para que fuera visible a gran distancia desde distintos puntos de la costa.

Así, el presidente manifestó que destinar fondos para demoler el Algarrobico supone "un paso adelante para la conservación de nuestro patrimonio natural y la demostración palpable" de que se está produciendo "un cambio real en el modelo de política medioambiental en Andalucía". </p> <p>

3.1.6. Associative network

Stimulus *Algarrobico* - (10/7782)
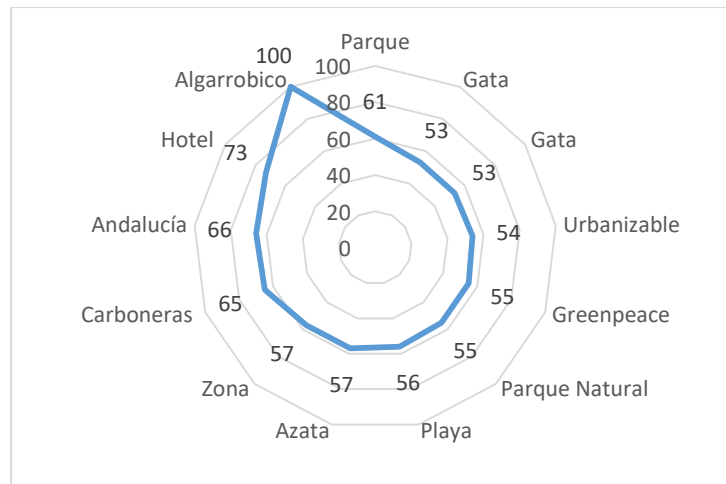
Figure 10. *Associative Network for Stimulus Algarrobico*

Contexts with reactions:

Noticias relacionadas con El Algarrobico y el hotel construido en este espacio natural protegido de la costa de Almería </p> <p>
https://www.miteco.gob.es/es/prensa/ultimas-noticias/el-miteco-ordena-la-paralizaci%C3%B3n-cautelar-de-las-obras-del-hotel-de-la-tejita-(tenerife)/tcm:30-509992

Greenpeace ha realizado este jueves una nueva acción para reivindicar la demolición del hotel de Azata del Sol en el paraje de El Algarrobico, en Carboneras (Almería), y se ha encaramado a la fachada del inmueble de una veintena de plantas para repintar la leyenda 'Ilegal' que ya fue rotulada, en diferentes formas, en acciones llevadas a cabo en 2007 y 2014. https://www.eldiario.es/andalucia/enclave_rural/medio_ambiente/activistas-greenpeace-algarrobico-hotel-ilegal_1_3285038.html

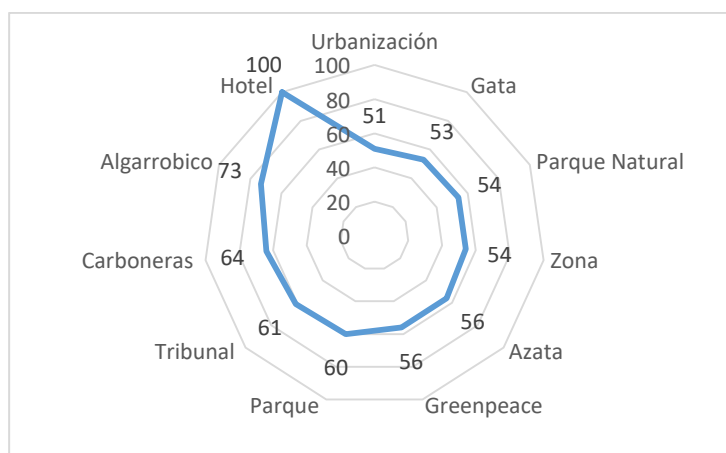Stimulus *Hotel* - (10/8131)

Figure 11. *Associative Network for Stimulus Hotel- (10/8131)*

Contexts with reactions:
Por qué sigue en pie El Algarrobico, el hotel fantasma de Cabo de Gata-Níjar. Situado en pleno Parque Natural almeriense el Tribunal Supremo declaró, en 2016, el área como ambientalmente protegida no urbanizable.

https://www.abc.es/viajar/alojamientos/abci-sigue-algarrobico-hotel-fantasma-cabo-gata-nijar-201908270128_noticia.html

La organización ecologista ha acusado a la Junta de Andalucía de retrasar hasta 2023 la demolición del hotel El Algarrobico, https://www.europapress.es/andalucia/almeria-00350/noticia-greenpeace-acusa-junta-andalucia-retrasar-2023-demolicion-algarrobico-20171221112603.html

3.2. German-language media space

3.2.1. General characteristics

It should also be noted that from over than 700 sites in Germany, 50% of the content was generated and published on the pages of online newspapers and magazines. The topic of expanding the station in Stuttgart was also discussed by 8.3% on provincial websites, 6% on wiki pages, 5% on blogs and private sites, 2.8% on social networks, 2.2% on YouTube, among other professional publications on technical topics and railway engineering topics.

3.2.2. Topic structure

The main topics in the topic structure are:
- public dissatisfaction with the prolonged and controversial construction project of the Stuttgart station,
- protests of various organizations against the project implementation,
- the multiplied budget,
- insufficient security measures,
- unforeseen harmful consequences and damage to both residents and nature,
- mass protest actions of citizens, which involve the police to pacify the demonstrators,
- federal protests,
- complaints to the authorities of the European Union (Fig. 12).
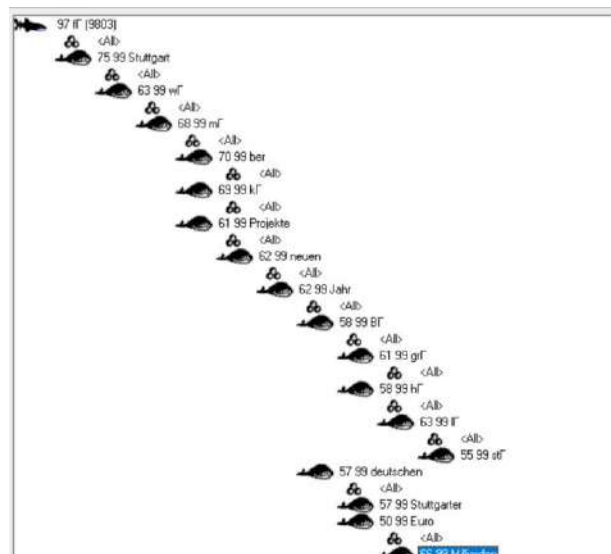

Figure 12. *Topic structure*

Examples of the content with maximum link weights:

Die Proteste gegen den Tiefbahnhof Stuttgart 21 dauern seit Jahren an. "Gute Bahn statt Tunnelwahn", stand auf einem Transparent der Gegner am Freitag. Es ist ein Meilenstein für das umstrittene Bahnprojekt Stuttgart 21. Sechs Jahre nach dem Baubeginn legt die Bahn feierlich den Grundstein. Wieder gibt es Proteste. Aber sie sind deutlich schwächer als in der Vergangenheit. Politische Prominenz fehlt jedoch. https://www.stimme.de/suedwesten/nachrichten/pl/Grube-sieht-Stuttgart-21-als-grosses-Geschenk-Proteste;art19070,3707857

Darum ist Stuttgart 21 das umwelt- und klimaschädlichste Infrastrukturprojekt weit und breit (...) Wachstumswahn Die Philosophie von Stuttgart 21 entstammt einer Zeit als grenzenloses Wachstum ohne Rücksicht auf natürliche Grenzen, Umwelt- und Klimabelastungen noch wenig infrage gestellt wurde: Stuttgart 21 ist ein aus der Zeit gefallenes Fossil. http://www.kopfbahnhof-21.de/darum-ist-stuttgart-21-das-klimaschaedlichste-infrastrukturprojekt-weit-und-breit/

3.2.3. Semantic network

Semantic links point to the emphasis on protests (100) and dissatisfaction of the opponents of the construction (99) performed by the federal and provincial administration and lack of sagacity on the part of architects, builders and technical support (99). Political parties are blamed (99) for ineffective transport network planning and miscalculation of tunnels (99) leading to increased costs (99), damage (99) and escalation (89) of discontent (Appendix 2).

Contexts are as follows:

Maurer sprach von einer Verhinerung der Demokratie. Für den Freitag kündigten die Demonstrierenden weitere Proteste in Berlin an. Neben der Protestaktion vor der Bahn-Zentrale besetzten Stuttgart 21-Gegner die baden-wuerttembergische Landesvertretung im Berliner Bezirk Tiergarten. </p> <p>.

In der 1995 vorgelegten Machbarkeitsstudie wurden die Kosten des Tiefbahnhofs (heutiger Planfeststellungsabschnitt 1.1, ohne die durch seine neue Lage erforderlichen Zulaufgleise) auf 930 Millionen DM (476 Millionen Euro) geschätzt.[89] 2009 wurden die Kosten mit 400 Millionen Euro beziffert.

Projektgegner bezweifeln diese Aussagen und Kosten und stellten mit dem Alternativprojekt Kopfbahnhof 21 ein Gegenkonzept vor, das eine Optimierung des Gleisvorfelds und die Ergänzung der Überwerfungsbauwerke zur kreuzungsfreien Einführung der Linien in den Bahnhof vorsieht und unter den veranschlagten Kosten für Stuttgart 21 liegen soll.

3.2.4. Semantic core

The semantic core includes such specific key concepts as protests and ignorance of environmental group projects (100), opponents of the construction (99) based on insufficient groundwater management and fire protection (99), as well as protection of monuments and the environment, climate and animals, not to mention their availability for disabled people. The escalation of protests (89) is also conspicuous due to questionable permits (69), reports and statements (99), as well as the damage (*Beeinträchtigung* 99) caused by the construction to residents (Fig. 13).
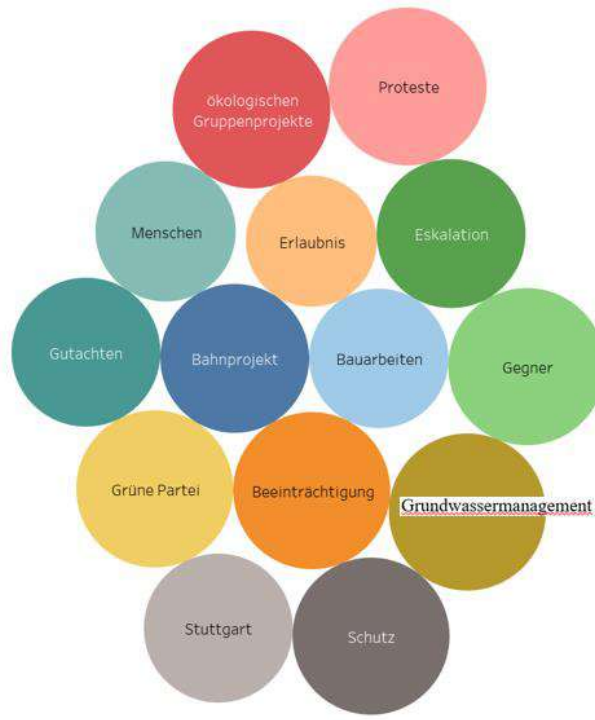
Figure 13. *Core of the semantic network*

Contexts are as follows:

Neuere Aussagen von Projektvertretern gehen jedoch demgegen über von einer deutlich reduzierten Zahl von zu rettenden Menschen aus: Der Brandschutzbeauftragte der DB AG, Klaus-Jürgen Bieger gibt für die gesamte Bahnsteighalle statt der zuletzt 16.164 nur 6.500 Menschen an[248] und der Projektsprecher Wolfgang Dietrich gibt als "worst case" für einen der vier Bahnsteige 2.530 zu evakuierende Personen an[249] Kritiker merken an, dass gemäss dem für den Stresstest geplanten Betriebsprogramm und der bisher für Stuttgart 21 angewandten Methodik des Eisenbahn-Bundesamts vielmehr auf dem am stärksten belegten Bahnsteig mehr als 6.000 zu rettende Personen anzusetzen wären und in Summe der Bahnsteighalle gut 16.000 Personen zu berücksichtigen wären.[250][159](S. 52 f) </p> <p>

Wegen der Längsneigung der Bahnsteige im Hauptbahnhof, die auf 400 Meter einen Höhenunterschied von sechs Metern haben (dies entspricht einer Steigung von rund 1,5 %), könnten Menschen in Kinderwagen und Rollstühlen zu Schaden kommen.[251][252] </p> <p> Die Fassaden des unter Denkmalschutz stehenden Empfangsgebäudes bleiben erhalten, ebenso Bahnhofshalle und Turm. Durch den Abriss der Seitenflügel ging die Integrität des U-förmigen Gesamtkomplexes mit seiner dreidimensionalen U-Struktur verloren. </p> <p>

Seit November 2009 finden wöchentlich sogenannte Montagsdemonstrationen mit mehreren tausend Teilnehmern statt.[313] Zu den Organisatoren des Protestes gehören die Bürgerinitiative Leben in Stuttgart, der Bund für Umwelt und Naturschutz Deutschland und der Kreisverband von Bündnis 90/Die Grünen

Tiere & Pflanzen </p> <p> Stuttgart 21 und Artenschutz </p> <p> Eidechsen, Fledermäuse, Juchtenkäfer" immer wieder gibt es bei Stuttgart 21 Konflikte mit dem Naturschutz.

3.2.5. Key topics

Key topics are protests from both residents, activists and the Green Party, and demands to stop the construction work, reduce costs, protect the environment and people.

Contexts are as follows:
Die Vorsitzende der Grünen-Bundestagsfraktion, Renate Künast, forderte den sofortigen Baustopp und prophezeite: in der Geschichte, wenn man versucht hat, Polizei vorzuschicken zur Lösung von Problemen, hat es hinterher richtig Probleme gegeben. </p> <p>

Die Konstruktion und Herstellung von Tunnelabschnitten in Verwerfungs- und Übergangszonen zu anderen geologische Schichten erfordert besondere Massnahmen. </p> <p>

Der BUND Baden-Württemberg hat das Konzept Stuttgart 21 " KombiBahnhof erarbeitet, durch das die Bahn den innerstädtischen Bahnknoten leistungsfähiger gestalten kann" und somit die Chance besteht, den Zielen fürr Klimaschutz und Luftreinhaltung näherzukommen. </p> <p>

Die erforderlichen Sicherheitsvorkehrungen drohen bei Stuttgart 21 zu gravierenden betrieblichen Restriktionen zu führen und die Leistungsfähigkeit des Bahnknotens noch weiter zu reduzieren.

Nach den Worten von Ministerpräsident Winfried Kretschmann (Grüne) plant das Land keine Feststellungsklage gegen die Bahn. Mit so einem von den S-21-Gegnern geforderten Schritt könnte möglicherweise gerichtlich festgestellt werden, dass das Land im Fall von Kostenerhöhungen nicht mehr als die bislang vorgesehenen 930 Millionen Euro zu Stuttgart 21 beitragen muss. </p> <p>

3.2.6. Associative network

Stimulus *Stuttgart* - (10/14869)
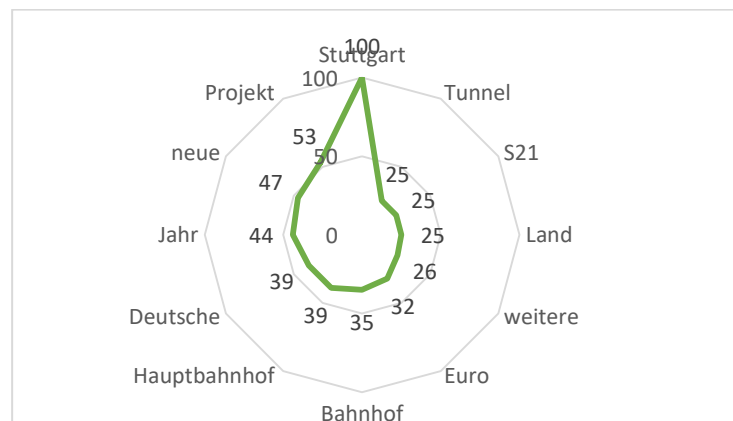
Figure 14. *Associative Network for Stimulus Stuttgart*

Contexts with reactions:
Nach Jahren der Planung und des politischen Diskurses treten die Umsetzung des Bahnprojektes und damit die Bauarbeiten immer mehr in den Vordergrund, was an vielen Stellen der Stadt und entlang der Autobahn nach Ulm zu sehen ist. </p> <p> Für die zunehmenden Fragen rund ums Bauen haben wir ein Informationszentrum eingerichtet, über welches sich insbesondere betroffene Bürgerinnen und Bürger rund um die Uhr an sieben Tagen pro Woche über das aktuelle Baugeschehen informieren können. </p> <p> Wir freuen uns weiterhin über Ihr Interesse an

unserem Projekt. </p> <p> Alternativen: K21, Mittelverwendung </p> <p> die ewige Diskussion und die neue politische Lage in Baden- Württemberg bringen mich dazu den Sinn von Stuttgart 21 zu hinterfragen. </p> <p> ich stelle mir vor aus dem Stuttgarter Hauptbahnhof einen Regional Bahnhof zu machen.

Der aufmerksame Bürger hat dies jedoch gemerkt und die Grünen waren die Gelackmeierten. </p> <p> Wenn man weiss, dass Stuttgart 21 (zusammen mit München 21 und Frankfurt 21) schon 2019 hätten fertig sein sollen, könnte man lachen, wenn's nicht zum Heulen wäre. Das wurde mal als das "bestgeplante Projekt der Bahn" bezeichnet. </p> <p> Wenn ich mich dagegen erinnere, dass die Bahn bei uns für eine Fussgängerüberführung über 4 Gleise nahezu ebenso viele Jahre (plus Planung) benötigte, und für eine zu renovierende schmale Strassenbrücke ein paar Meter weiter ebenfalls über die Gleise 8 Jahre allein als Planungszeit veranschlagt sind, sind 15 Jahre Bauzeit für einen ganzen Bahnhof gar nicht mal so lange. </p> <p> Nicht nur Kostenexplosion und völlig aus dem Ruder geratener Zeitplan sind skandallös. Der Architekt Frei Otto, unter anderem Schöpfer des Daches des Münchner Olympiastadions, hat sich von dem Projekt S21 distanziert, weil in der Planungsphase neue Erkenntnisse über die besonderen Risiken in Stuttgarts Untergrund bekannt wurden.

Veranschlagt sind, sind 15 Jahre Bauzeit für einen ganzen Bahnhof gar nicht mal so lange. </p> <p> Nicht nur Kostenexplosion und völlig aus dem Ruder geratener Zeitplan sind skandalös. Der Architekt Frei Otto, unter anderem Schöpfer des Daches des Münchner Olympiastadions, hat sich von dem Projekt S21 distanziert, weil in der Planungsphase neue Erkenntnisse über die besonderen Risiken in Stuttgarts Untergrund bekannt wurden.

Stimulus *Proteste* - (10/3847)
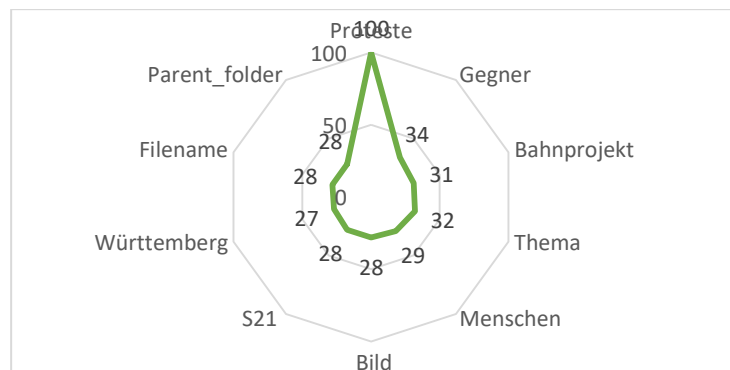
Figure 15. *Associative network for stimulus Proteste*

Contexts with reactions:
<p> *Bahnhof Stuttgart 21: Spätzle-Revolte gegen das groesste Bau-Projekt Deutschlands </p> <p> Bauprojekt Stuttgart 21 | Warum die Schwaben auf die Barrikaden gehen </p> <p> Proteste gegen Bahnhofsumbau eskaliert - BILD.de erklärt, worum es geht </p> <p> Artikel von: Britta Frischemeyer veröffentlicht am 26.08.2010 - 16:56 Uhr </p> <p> Die Schwaben gehen auf die Barrikaden!*

September 2010 setzt die Polizei in Stuttgart mehrere Hundertschaften ein, um den Mittleren Schlossgarten von Demonstrant*innen zu räumen, die gegen das Fällen von Bäumen für das Bahnprojekt "Stuttgart 21" protestieren.

Mehr Informationen dazu finden Sie in unserer Datenschutzerklärung. </p> <p> Deutsch unterrichten </p> <p> Deutschland </p> <p> Stuttgart 21 - zwischen Ehrgeiz und Wutbürgern </p> <p> Sechs Jahre nach den Massenprotesten nun also die Grundsteinlegung für den neuen Bahnhof Stuttgart.

Nach dem Beginn der Abbrucharbeiten am Nordflügel des Stuttgarter Hauptbahnhofs im Sommer 2010 nahmen die Proteste gegen Stuttgart 21 zu. Teilweise mehr als 50.000 Teilnehmende zogen Woche für Woche friedlich durch die Stuttgarter Innenstadt.

3.3. Russian-language media space

3.3.1. General characteristics

Among the digital platforms on which the digital content dedicated to the implementation of the North East Chord project was most actively distributed, the VKontakte social network is by far the leader. Top positions are also taken by Facebook, Twitter, mos.ru and Instagram. Social interaction of actors interested in the construction of the North East Chord leads to the formation of communities that prefer communication on VKontakte (Fig. 16).
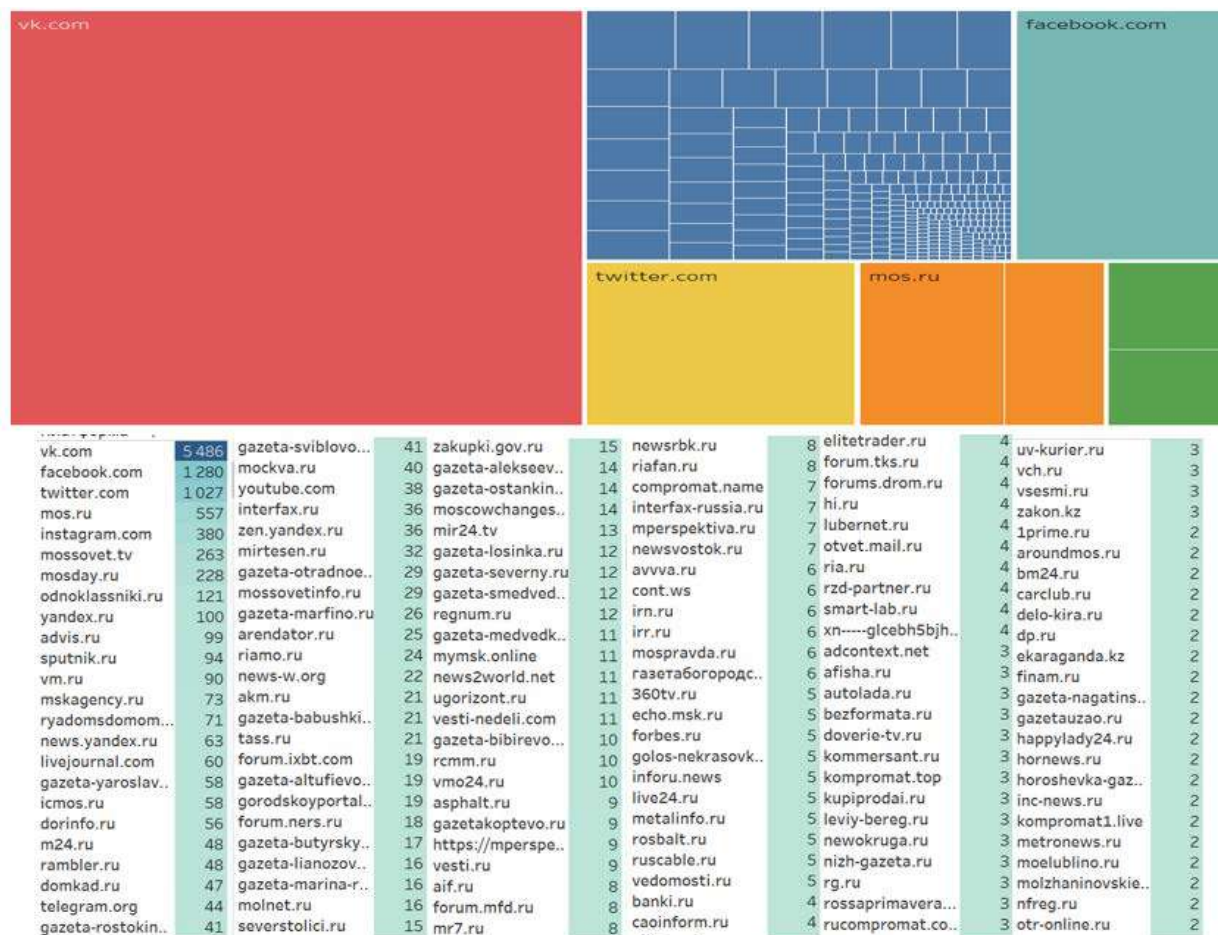

vk.com	5 486	gazeta-sviblovo..	41	zakupki.gov.ru	41	newsrbk.ru	15	elitetrader.ru	8	uv-kurier.ru	4 / 3
facebook.com	1 280	mockva.ru	40	gazeta-alekseev..	40	riafan.ru	14	forum.tks.ru	8	vch.ru	4 / 3
twitter.com	1 027	youtube.com	38	gazeta-ostankin..	38	compromat.name	14	forums.drom.ru	7	vsesmi.ru	4 / 3
mos.ru	557	interfax.ru	36	moscowchanges..	36	interfax-russia.ru	14	hi.ru	7	zakon.kz	4 / 3
instagram.com	380	zen.yandex.ru	36	mir24.tv	36	mperspektiva.ru	13	lubernet.ru	7	1prime.ru	4 / 2
mossovet.tv	263	mirtesen.ru	32	gazeta-losinka.ru	32	newsvostok.ru	12	otvet.mail.ru	7	aroundmos.ru	4 / 2
mosday.ru	228	gazeta-otradnoe..	29	gazeta-severny.ru	29	avvva.ru	12	ria.ru	6	bm24.ru	4 / 2
odnoklassniki.ru	121	mossovetinfo.ru	29	gazeta-smedved..	29	cont.ws	12	rzd-partner.ru	6	carclub.ru	4 / 2
yandex.ru	100	gazeta-marfino.ru	26	regnum.ru	26	irn.ru	12	smart-lab.ru	6	delo-kira.ru	4 / 2
advis.ru	99	arendator.ru	25	gazeta-medvedk..	25	irr.ru	11	xn-----glcebh5bjh..	6	dp.ru	4 / 2
sputnik.ru	94	riamo.ru	24	mymsk.online	24	mospravda.ru	11	adcontext.net	6	ekaraganda.kz	3 / 2
vm.ru	90	news-w.org	22	news2world.net	22	газета6городс..	11	afisha.ru	6	finam.ru	3 / 2
mskagency.ru	73	akm.ru	21	ugorizont.ru	21	360tv.ru	11	autolada.ru	5	gazeta-nagatins..	3 / 2
ryadomsdomom..	71	gazeta-babushki..	21	vesti-nedeli.com	21	echo.msk.ru	11	bezformata.ru	5	gazetauzao.ru	3 / 2
news.yandex.ru	63	tass.ru	21	gazeta-bibirevo..	21	forbes.ru	10	doverie-tv.ru	5	happylady24.ru	3 / 2
livejournal.com	60	forum.ixbt.com	19	rcmm.ru	19	golos-nekrasovk..	10	kommersant.ru	5	hornews.ru	3 / 2
gazeta-yaroslav..	58	gazeta-altufievo..	19	vmo24.ru	19	inforu.news	10	kompromat.top	5	horoshevka-gaz..	3 / 2
icmos.ru	58	gorodskoyportal..	19	asphalt.ru	19	live24.ru	9	kupiprodai.ru	5	inc-news.ru	3 / 2
dorinfo.ru	56	forum.ners.ru	18	gazetakoptevo.ru	18	metalinfo.ru	9	leviy-bereg.ru	5	kompromat1.live	3 / 2
m24.ru	48	gazeta-butyrsky..	17	https://mperspe..	17	rosbalt.ru	9	newokruga.ru	5	metronews.ru	3 / 2
rambler.ru	48	gazeta-lianozov..	16	vesti.ru	16	ruscable.ru	9	nizh-gazeta.ru	5	moelublino.ru	3 / 2
domkad.ru	47	gazeta-marina-r..	16	aif.ru	16	vedomosti.ru	8	rg.ru	5	molzhaninovskie..	3 / 2
telegram.org	44	molnet.ru	16	forum.mfd.ru	16	banki.ru	8	rossaprimovera..	4	nfreg.ru	3 / 2
gazeta-rostokin..	41	severstolici.ru	15	mr7.ru	15	caoinform.ru	8	rucompromat.co..	4	otr-online.ru	3 / 2

Figure 16. *Rating of platforms on which the digital content dedicated to the implementation of the North East Chord project was most actively distributed*

It should be noted that at various stages of the analyzed period, the activity of using digital platforms, in particular, the Top 10 sources by the total number of messages, was different. Throughout 2019

and half of 2020 (January 01, 2019 - September 20, 2020), there is a decrease in the number of messages on Facebook, Instagram, Twitter. On other resources, there is an increase in messages. The maximum growth of messages (434) is observed in the social network VKontakte.

Analysis of the general database allows for the conclusion that the coverage of messages with different sentiments shows the predominance of the neutral cluster, the second place is taken by the positive cluster, and the negative cluster is significantly inferior to them in quantitative terms (Fig. 17).
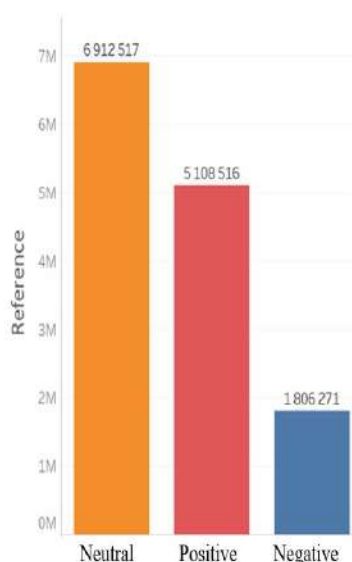
Figure 17. *Coverage of messages with various sentiment types*
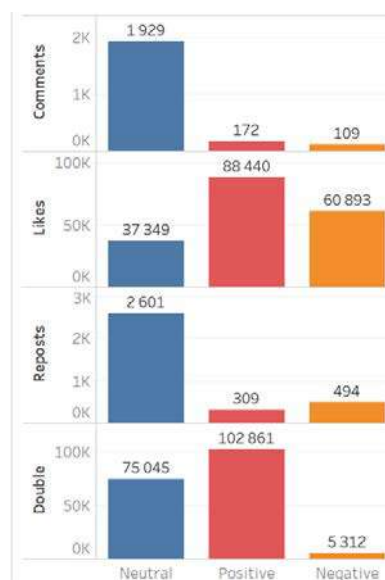
Figure 18. *Digital footprints of actors with various sentiment types*

It is significant that the quantitative indicators of positive and negative communications differ on various digital resources. While positive messages are mostly located on platforms VKontakte, Twitter, mos.ru, mosday.ru, negative messages are mainly located on platforms VKontakte, Facebook, Twitter, mos.ru, Instagram (Fig. 18).

This situation is determined by the leading position of the social network VKontakte in the Russian-language media space. In terms of quantitative data, VKontakte is significantly ahead of similar resources (Fig. 19). A large number of positive messages on Twitter, mos.ru, mosday.ru are to a certain extent explained by their active use by official and biased authors and sources. Facebook is traditionally used by Russian-speaking users as a platform for discussing political and socially significant issues, often with negative connotations.
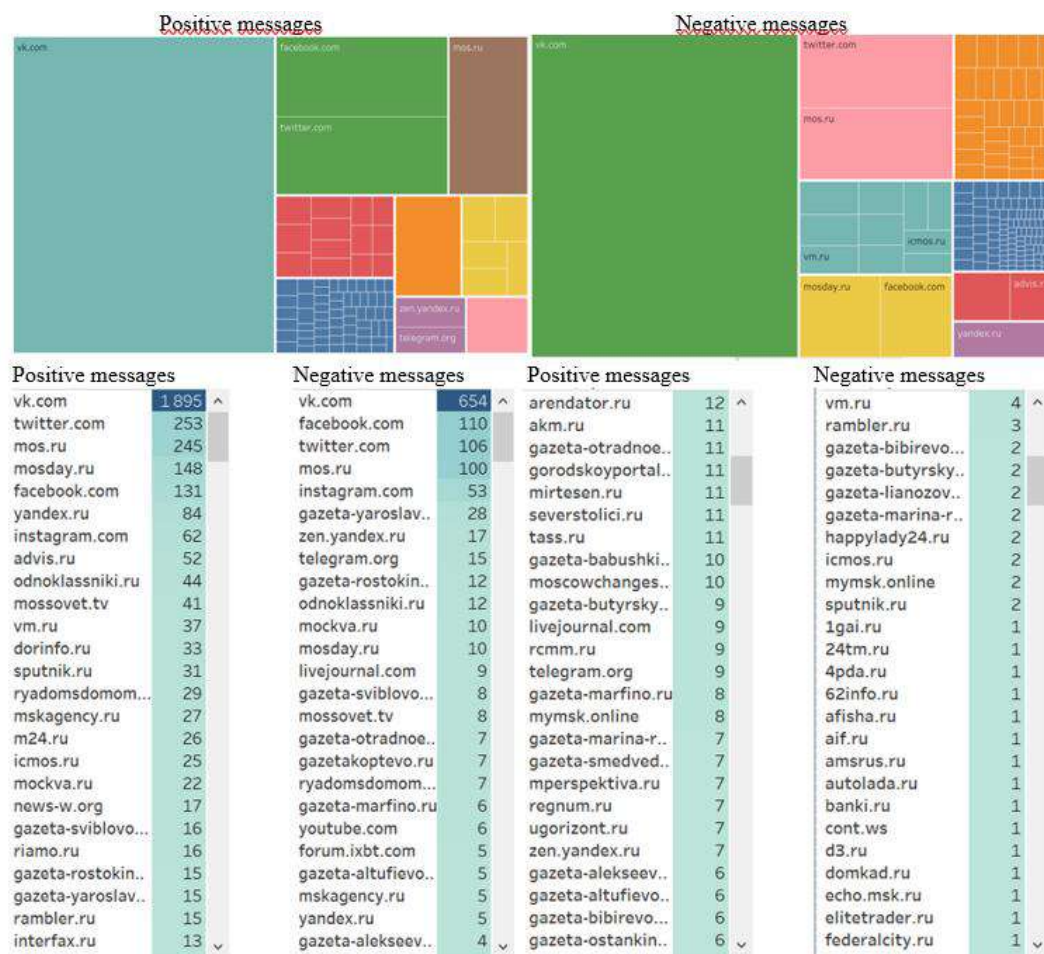
Figure 19. *Distribution of negative and positive messages by digital platforms*

3.3.2. Topic structure

The topic structure of the consolidated dataset reflects the predominant nature of the content, which consists mostly of the official messages. The main components of the topic structure of the Russian-language database are:

- description of the NEC construction progress,
- potential improvement of the transport situation in the city after its opening (Fig. 20).
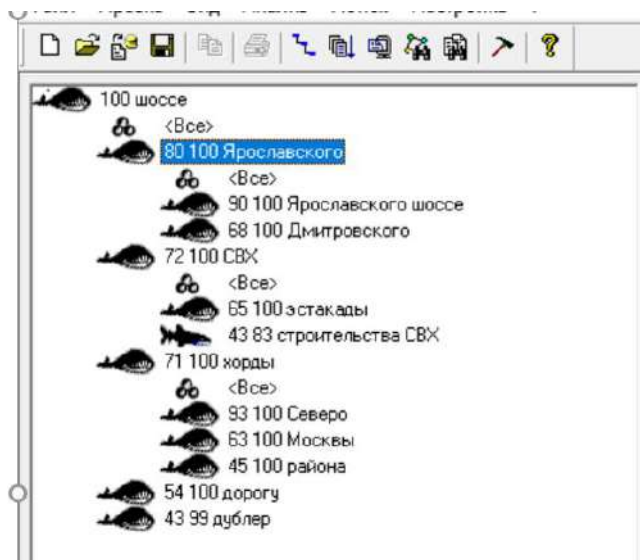
Figure 20. *Topic structure of the Russian-language dataset*

Examples of the content with maximum link weights:
At present, the North East Chord is being built on two sections: from Otkrytoye Highway to Yaroslavskoye Highway and from Yaroslavskoye to Dmitrovskoye Highway.
It will become part of the North East Chord *from Yaroslavskoye to Dmitrovskoye Highways.*

3.3.3. Semantic network

The semantic network of the consolidated dataset (Appendix 3) shows the semantic accents that prevail when covering the topic of the North East Chord implementation. The maximum link weight of 100 and 99 are assigned, in particular, to the nominations *Construction Department* (100), *Head of the Moscow Construction Department Rafik Ravilovich Zagrutdinov* (100). During the discussion of the North East Chord construction problems, the names of the mayor *Sergei Sobyanin* (99), *Rotenberg* (99) and *Deputy Mayor A. Bochkarev* (99) are mentioned.

A significant place is occupied by transport facilities most closely related to the North East Chord: *MKAD* (100), *Dmitrovskoe* (100), *Yaroslavskoe* (100), *MCC* (99), *Altufevskoe* (99), *Botanical Garden* (99), *Veshnyaki-Lyubertsy* (99), *Vladykino* (99), *5th Podbelsky passage* (99), *General Dorokhova st.* (99), *Nizhnelikhoborskiy passage* (99), *Oktyabrskaya railway* (99), *Kommunarka* (99), *Kosinskoe highway* (99), *Lyubertsy* (99), *Volokolamskoe highway* (99), *M 11 highway* (99), *Petersburg* (99), *Lukhmanovskaya st.* (99) and others.

Various problems of urban planning policy and construction and technical aspects are mentioned: *pouring of concrete to reinforce bridge supports* (99), *pre-assembly of metal structures* (99), *multi-level transport interchanges* (99), etc. (Appendix 3).

3.3.4. Semantic core

Despite the fact that the topic structure and the semantic network show the prevalence of the official content with specific given topics, the core contains nominations that signal the main claims of residents: *felling* (99), *trees* (99), *Losiny Ostrov* (99), *National Park* (99) (Fig. 21).

Figure 21. Core of the semantic network

Contexts are as follows:
He spoke about the unnecessary, barbaric clearings in the park, which were sanctioned (...) as part of the project for the construction of the North East Chord.

Losiny Ostrov National Park, Moscow city part, a section of the planned construction of the North East Chord and total lawlessness with the exclusion of a "needless" and "problem" (...) area from the boundaries of this federal natural area of special concern.

3.3.5. Key topics

3.3.5.1. In the content generated by users, the main claims of Muscovites against the builders of the North-East Chord are clearly presented; their main point being that part of the Chord is supposed to be built on the territory of the Losiny Ostrov National Park, which will entail its destruction.

Contexts are as follows:
So, *the moderator of the thematic platform of the All-Russian Popular Front "Ecology" in the Moscow region, Anton Khlynov, announced that the sections of the park were excluded from the boundaries of the Moscow city part of the Losiny Ostrov National Park on the site of the planned construction of the North-East Chord (NEC) in violation of the existing procedures just to proceed with the NEC construction.*

3.3.5.2. The activists found a violation of the law in reducing the Losiny Ostrov park area for the NEC construction and demanded that the prosecutor's office cooperate in this issue.

3.3.5.3. The plans for the Chord construction affect the Kuskovo Park, and the activists campaign against it too by addressing to the Moscow City Duma deputies and initiating a request to the Moscow Prosecutor's Office.

Contexts are as follows:

Moscow City Duma deputy Evgeny Stupin reports that after a discussion with activists, he addressed to the Moscow prosecutor with a request to review the Moscow government's decree on the formation of a specially protected natural area on the part of the Kuskovo Park for compliance with the legislation.

3.3.5.4. Muscovites are actively protesting against tree felling during the construction of the North-East Chord, which will lead to a deterioration of the ecological situation in the city: Contexts are as follows:

Over the years, the most trees and shrubs have been cut down in the Western District, that is 200 hectares. 80 hectares in the Eastern and Northern districts each. The Central Administrative District suffered "less" than the others - about 22 hectares were cut down here.

There is hardly a sane person who will support the tree felling. On the contrary, people want to live closer to parks. Moscow already has a shortage of fresh air, and with the destruction of the city's "lungs" one has to breathe all kinds of nasty things.

3.3.5.5. The peak of negative reactions was recorded on August 21, 2020 and was associated with the trial of Moscow State Duma deputy Oleg Sheremet, who opposed the construction of the North-East Chord and the destruction of the Kuskovo Park. Thus, the NEC construction is actively involved in the political process, linked to the activities of certain political actors and incorporated in the political content (Fig. 22).
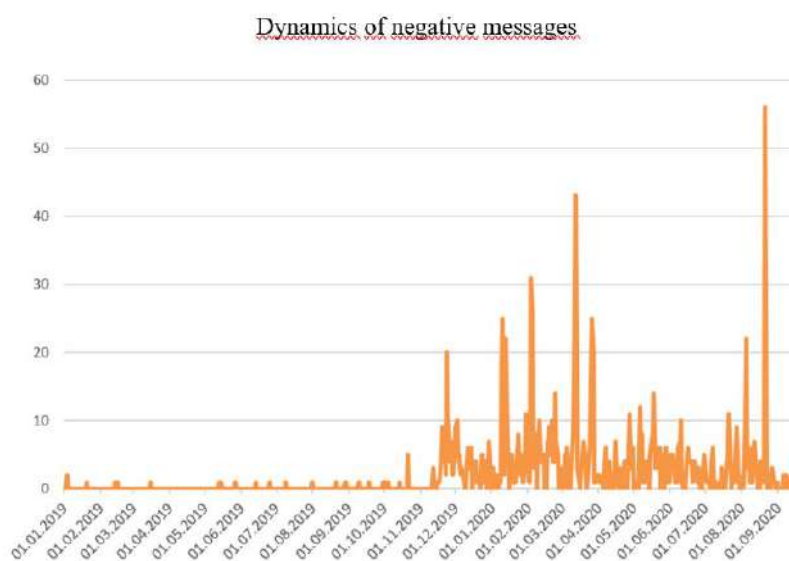
Figure 22. *Dynamics of the negative message base*

3.3.5.6. Environmental activists and citizens are expressing distrust of official experts and officials. Greenpeace is the main authoritative source, which, according to residents, provides reliable information:

Activists believe that In Moscow, 800 hectares of parks, gardens and squares were cut down in 12 years - such figures were quoted by Greenpeace Russia several years ago. The destruction of green spaces was not left at that; the capital is diligently covering itself with asphalt and paving stones.

3.3.6. Associative network

Stimulus *National Park* - (10/40721)
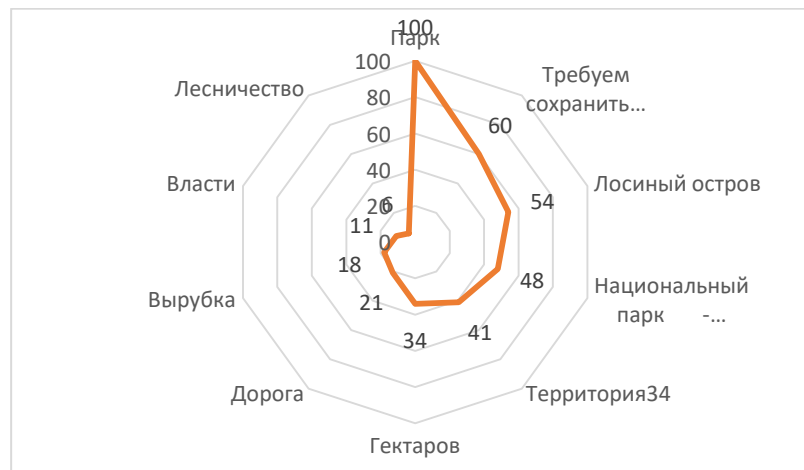
Figure 23. *Associative network for stimulus National Park*

Contexts with reactions:

Losiny Ostrov Park was illegally cut for the North East Chord
*The Ministry of Natural Resources wants to cheat people and show that tree felling for the road will not harm the national park
 To do this, it is proposed to join Gorenskoye and Moninskoye forestries with a total area of 1,800 hectares to Losiny Ostrov (now the total area of Losiny Ostrov is 11.6 thousand hectares).*

According to Greenpeace Russia experts, the preparation of this decree is an attempt to retroactively legalize the tree felling and the construction of the highway in Kuskovo.

Stimulus *Felling* - (10/25312)
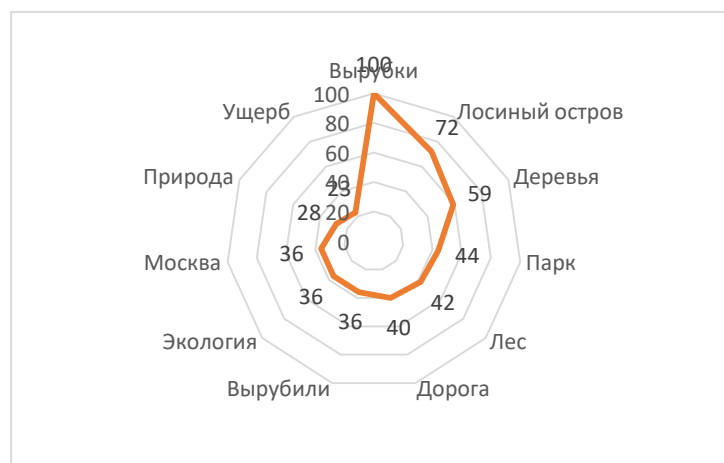
Figure 24. *Associative network for stimulus Felling (10/25312)*

Contexts with reactions:

Hundreds of thousands of trees will be cut down in Losiny Ostrov for shopping centers, new roads and a residential complex.

"If it were a national park with an area of one million hectares, then deforestation would be an insignificant loss, but for Losiny Ostrov, the destruction of 140 hectares of the territory causes immeasurable harm", says ecologist Mikhail Kreindlin.

4. Conclusions

The need for constant changes in urban spaces driven by the logic of economic development conflicts with the desire of citizens to preserve natural urban landscapes and protect their rights for healthy living environment. Escalation of conflicts of this type can be predicted in various countries due to the further deterioration of the ecological situation, the growth of social inequality in cities and the involvement of an increasing number of people in the movement to protect the environment.

The analysis made it possible to identify integral features that characterize the common trends in all three national contexts:
As shown by the analysis of the content generated by active actors the main driving force behind environmental protests is activists who are concerned with nature preservation, environmental safety, organize environmental movements, actively inform the public about the potential and real dangers that the implementation of urban development projects entails.

Activists draw the attention of public to environmental issues and contribute to an active response from citizens. Paradoxically, cities from the main culprit for climate change can become the most influential centers in the fight against environmental problems. Active citizens can unite in virtual network communities and environmental movements and use modern means of Internet communication effectively. The strength of such movements can be very great and even exceed the Influence of traditional media and social institutions.

Analysis of the semantic networks of the Spanish, German and Russian content showed that, unlike the activists, politicians are not included in the core of the semantic network in any of these Internet-segments. It is civil society representatives who are rushing against the construction of the Hotel Algarrobico in the protected area of Almeria in Spain, against the implementation of the road traffic and urban development project to reorganize the Stuttgart railway junction in Germany and fight for the preservation of the Losiny Ostrov National Park, Kuskovo Park, as well as against the tree felling during the construction of the North East Chord in Moscow in Russia. Thus, environmental problems concern activists and civil society much more than politicians.

Online social networks and Internet platforms are replacing city squares, becoming spaces where discussions of various urban problems can be held and monitored much earlier than street protests. This is the place where communities are formed, as well as appeals and petitions are submitted, relevant information is spread, and new supporters are attracted.

If the city authorities turn a deaf ear to these virtual communities and their appeals, these protests can go offline. Environmental protests go offline in extreme cases, when the actions of the authorities or developers cause a sharp rejection among the citizens, pose a high degree of danger to the environment and disturb the ecological balance. Then one can observe an open confrontation with the authorities, which takes place with force and involve law enforcement agencies.

In all three analyzed situations, residents also apply to the courts, the prosecutor's office, hoping to prevent negative environmental consequences and stop these constructions. Attempts to solve these problems with the help of the national law enforcement system do not always bring positive results.

There is a certain expert knowledge crisis. The national branches of Greenpeace in Spain, Germany and Russia become the most authoritative body for environmental activists. It should be noted that in Russia there is a maximum degree of distrust of official experts.

National political organizations that deal with environmental issues, such as the Green Party and the Catalan Green Party, have virtually no seats in the Spanish government, as well as the Russian Ecological Party "Greens", a political public organization that unites Russian citizens to solve the country's environmental problems.

Accompanying problems in environmental protests against specific urban development projects are the problems of water and air pollution, dense developments, deforestation and desertification and the disappearance of the once most common animals. Issues related to the destruction of the environment and harm to nature are worrying citizens more and more, forming conflict-prone digital zones around pressing environmental problems of cities in various countries.

Distinctive features are determined by local (social, political, geographic) and national aspects.

During the analysis of conflict zones, it turned out that in Spain and Germany, critical discussions of urban planning projects begin on the pages of traditional media, and then spread on the Internet, in the user-generated content. In Russia, conflicting communications take place on social networks, only occasionally appearing on the pages of the official media. The objectives of the study were not to study the reasons why the Moscow media do not respond to social urban conflicts. But we can definitely conclude that such silence does not solve the problem but creates additional difficulties for the authorities. A latent conflict is more difficult to identify, which makes it difficult to understand the arguments of dissatisfied citizens, which means that finding solutions to the problem is also more difficult. Lack of reactions from the city authorities and meaningful discussion of the problem, in turn, can form the effect of alienation of citizens from the process of transforming the urban environment.

In the materials on these environmental conflicts both in Spain and in Germany, there is a high coincidence of the topic structure and the semantic network of the content, which indicates a high degree of transparency of communication. Thus, the implicit content comes to the surface and reflects the protests more expressively, thereby turning into a mechanism of public control. Thanks to public protests and the involvement of the Green Party and other activists, criticized construction projects such as the Algarrobico Hotel and Stuttgart 21 are being suspended or redeveloped in an environmentally friendly manner.

An active presence of Greenpeace representatives is observed in all three countries; however, the national peculiarities of Spanish and German activists also include the involvement of the legal instances of the European Community. In the social movement expressed in the communication between Spain and Germany, the priority is primarily given to the welfare and safety of the public and the protection of the environment, pushing commercial goals into the background.

In the Russian-language media space, the semantic core of the digital conflict zone associated with the construction of the North East Chord in Moscow consists of the following topics: destruction of the Losiny Ostrov National Park for the sake of construction of the North East Chord; destruction of the Kuskovo Park; deterioration of the environmental situation in the city due to the tree felling during the construction of the North East Chord.

Thus, social media is becoming an important component of environmental protests; the environmental activists of the three countries, which are actively supported by citizens, are catalysts for environmental protests; they believe that urban development should not be implemented at the expense of the deterioration of the environmental situation. Environmental problems are becoming top-priority, the most important for the quality of life; they can unite a large number of citizens, create communities to protect the environment, influence the development of territories and social and political life. It is possible to predict the intensification of environmental protests in various countries during the implementation of urban development projects that conflict with environmental protection and harm nature, which is obvious due to the growing importance of environmental problems.

This study is a call to the public not to fold their hands in the fight for preserving the environment, and to policymakers to learn lessons from today's pandemic and the difficulties in dealing with emergencies.

Notes
[1] All figures presented below in the "Results" section were made by the authors of the article.

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Appendix 1.
Semantic network of a summary dataset for Hotel Algarrobico (Spain)

Appendix 2.

Semantic network of a consolidated dataset dedicated to the development of road traffic and urban development on the reorganization of the railway junction of Stuttgart (Germany)

Appendix 3.
Semantic network of the consolidated dataset dedicated to the North East Chord of Moscow (Russia)