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Abstract. This study exposes approaches to "collective creativity"by adopting a regional needs assessment through the World Café method. A multidisciplinary team of researchers and stakeholders worked together to identify needs within the region by using the World Café method and enhancing participation in policy-making. The paper aims to describe regional needs assessment as a useful approach for studying demographic and migration challenges in the regions of Latvia. The formal outcomes of the project are policy recommendations which have been used for the elaboration of planning documents at the national, regional and local level. Moreover, this approach also fostered positive collaborative practices among scientists and policymakers, including scientists who come from various disciplines and found a common platform for the solution of problems.

Keywords: *demographic and migration challenges, regions, Latvia, needs assessment*
DOI: 10.22364/fg.18.1

Introduction

In this paper, we explore an innovative approach – regional needs assessment through networking with regional stakeholders using the “World Café method” (Lohr et al. 2020). A needs assessment is a systematic process to identify and address needs or “imperfections” in the current situation and identify how more desirable circumstances could be achieved. Needs assessments help to improve the quality of policies, thereby improving performance and making it more likely to achieve desired outcomes (Watkins et al. 2012; Altschuld and Watkins 2014; Morris 2015). The World Café method complements other qualitative data-gathering methods in several ways (Lohr et al. 2020), as well as enhancing “collective creativity” (Senge 2005). Firstly, according to Lohr and colleagues, it helps with organising discussions better, clarifying the themes and increasing the level of participation. It has also been used as a novel method in several fields of research: for example, in research into learning (Tan and Brown 2005; Bush and Paranjpey, 2015), into strategic planning among economic actors (Chang and Chen 2015), and into the well-being of particular societal groups (Clements et al. 2020).

There is evidence of the usefulness of the World Café method in the case of Latvia, it has also been used, for example: in discussing a maritime spatial plan for the

west coast of Latvia (Ruskule and Veidemane 2011), and at a regional youth forum in Kurzeme (Kurzemes…, 2013).

As a method, it fosters mutual dialogue and learning. Furthermore, in cases when policymaking representatives are involved, it increases the level of "good practice" exchange. Needs assessments also involve networking practices and enables participants to explore qualitative statements and to carry out assessment of regional strengths, weaknesses, and opportunities. In this case, particular attention is paid to issues related to demographic and migration challenges, and regional and local potential for culture-based development. Regional events enhance public involvement and cross-disciplinary approaches to migration and responses to demographic challenges. A needs assessment is a systematic process to identify and address needs or "imperfections" in the current circumstances and identify how more desirable circumstances could be reached. Needs assessments help to improve the quality of policies, making it more likely to be achieve desired outcomes (Watkins et al. 2012; Altschuld and Watkins 2014; Morris 2015).

Two issues were considered while planning the research. Firstly, available statistical data insufficiently allows representation of the impact of migration on demographic issues. Thus, it is imperative to know and understand how the situation is interpreted by local people who live in the regions, as well as how they feel, and how emigration and depopulation affect their daily lives and change the areas in which they live. Regional workshops of this kind were seen as a useful tool for researchers in looking at the situation in the regions from a grassroots perspective. Secondly, it is essential for a group of researchers from different sectors and universities who start working together on a joint project to ensure integrated action and a common starting point. These regional workshops were also crucial for researchers to get to know each other, to understand the themes of each team and to further explore their subjects on the basis of shared knowledge.

The regional workshops aimed to gather views on the demographic development and migration processes of those living and working in the region. The diverse range of participants allowed for fundamental problems to be identified, as well as examples of good practice and possible solutions for the sustainable development of the region.

"DemoMig" project

The complicated relationship between demographic change and migration has attracted a large body of previous research around the world (Hugo 2011; Findlay and Wahba 2013). The problems caused by low fertility rates, the ageing of the population and increasing out-migration have negative consequences for demographic change and the development of a sustainable and inclusive society in Latvia. Depopulation and outflows from particular age cohorts contribute to demographic imbalances and the loss of human capital. Moreover, the negative consequences of demographic change and migration have territorial

implications, affecting more remote settlements and contributing to regional disequilibrium. These significant demographic and migration challenges are a critical socio-economic issue in terms of presenting barriers to sustainable development and the growth of an inclusive society; thus, more profound studies are needed to assess and find a response to the depopulation of Latvia.

The study is based on the project "Towards Sustainable Development and an Inclusive Society in Latvia: A Response to Demographic and Migration Challenges (DemoMig)", part of the national research programme "Latvian Heritage and Future Challenges for Sustainable Development". This project has been running for 36 months, since December 2018, and aims to assess and respond to migration and demographic challenges in order to foster sustainable development and an inclusive society in Latvia. The application of an interdisciplinary approach enables the research to examine the following themes: an exploration of migration trends and continuing natural population decline and the regional dimensions of these issues in Latvia, as well as an exploration of the importance of culture in the revitalisation of regions. The project results provide a comprehensive overview of demography, migration, social sustainability and inclusive society and regional specifics. The primary outcomes of the demographic and migration shifts and of the assessed regional diversity are described and mapped. The societal impact of migration and demographic challenges within the context of highly valuable human capital resources are described, and talented and highly skilled individuals are identified. The role of higher education concerning human capital loss and the promotion of policies aimed at avoiding a brain drain of highly skilled students and educators is evaluated. The role and importance of culture-based resources assessed in the context of the potential for revitalisation of the region. Tools for evidence-based policy recommendations are provided for the growth of a sustainable and inclusive society in Latvia.

Statistical data show the extent of emigration and immigration, inequalities and poverty, employment and average wages. In order to successfully launch the study, an in-depth understanding of the situation in the regions is required. Nevertheless, these quantitative data do not help us to understand how problems are seen and interpreted by the people who live in these regions. For this reason and in order to carry out an assessment of the region's needs, a multidisciplinary team of researchers was chosen to identify and involve the local population in a method of assessing the needs of the region, using the World Café method (Brown 2010; Pagliarini 2006) which is used extensively for societal involvement (Lohr et al. 2020).

Data and methods

In order to perform regional needs assessments within the context of project research plan, six regional workshops were organised with stakeholders to enhance public involvement and strengthen the cross-disciplinary elaboration. A regional needs assessment was carried out through a discussion with stakeholders on the topics

of strength, weaknesses and opportunities in the fields of demographic and migration challenges, and issues of education and culture-based development.

For the discussions, the “World Café" method (Brown 2010) was used, which ensured a participatory approach to generating new knowledge and sufficient group work to discuss these topics.

The regional workshop structure included several vital principles. Besides creating a hospitable space for the discussion of relevant questions, the moderator encouraged everyone to take part by creatively characterising the traditional views of locals living in a particular region.

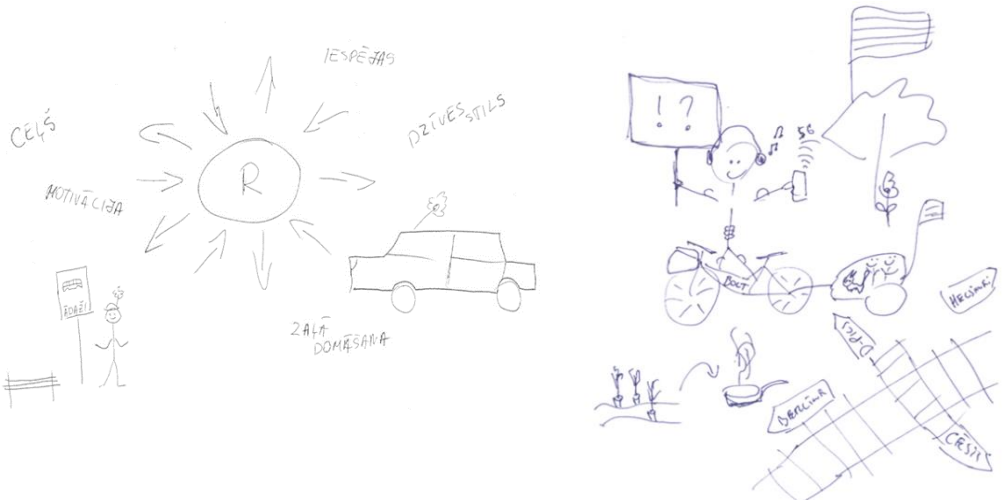

Figure 1. **Collective creativity about Riga and Pieriga region** (field work material)

Participants in the regional workshops discussed five main topics, and each of these included five sub-topics. Thus, the total number of discussed questions was 25. The main topics concentrated on were the following:

- The role of education in retaining and attracting a skilled workforce
- Migration of qualified specialists
- Culture as a driving force in regional development
- Demographic processes and migration
- Demographic policy

The World Cafe method appeared a great way for participants to discuss important issues and create a joint knowledge base. It is suitable for discussing current issues and new ideas, and for finding relevant solutions, as well as establishing a dialogue between the various participants in the discussion group. The name of the method is an appropriate metaphor because the workshop is like a café where different people meet. There is an exchange of thoughts and opinions, of new ideas, and of shared knowledge. Furthermore, the collected data material from the discussions is transcribed, generalised and edited, transposing it to the texts describing a particular topic.

The participants in the regional workshops represented members of planning regions, municipalities, non-governmental organisations, entrepreneurs and mixed population groups.

Table 1. **The number of participants by regional needs assessment workshop**

Regional event	Kurzeme	Zemgale	Vidzeme	Latgale	Pieriga	Riga
Number of participants	30	40	42	48	37	51

In total, six regional events were organised, in addition to a further closing event. The schedule of regional events from late May 2019 to the closing event in mid-January 2020 is shown in Figure 2.

Figure 2. **Calendar of regional events, May 2019–February 2020** (authors' figure)

Furthermore, around 120 participants gathered for the final event, which took place in mid-February.

The regional events were organised in collaboration with the planning regions of Latvia. Practicalities such as choice of the venue, the date, production of informative materials, dissemination of materials, invitations were settled in a mutually collaborative manner with the participation of scientists, representatives from the planning regions and those involved in the particular event.

Results: Challenges and Solutions in the regions of Latvia

The main output of the information gathered at the regional workshops was further elaborated on by the thematic teams of scientists. Each team had to prepare a report on the topic. In the majority of the cases, reports focused on providing a description of the current situation, exposing the main challenges the particular region or individual was facing, and, finally, presenting practical solutions and recommendations to policymakers. Furthermore, posters were created for each regional workshop to display the main features and the most common recommendations.

Figure 3. **Challenges and solutions in Latgale region: a summary of the regional workshop** (authors' figure)

The final stage of the qualitative material gathered with the World Café method was an elaboration of the policy recommendations, which were systemised according to the region and the topic: education, qualified specialists, culture as a driving force, migration and demographic policy. In addition to this, thematic division topics were covered by the expert scientific teams. For example, issues related to demographic policy were covered by demographers, issues related to the qualified migrant workforce and the importance of culture were examined by sociologists. Human geographers addressed complex issues related to demographic processes and migration patterns. Pedagogical experts examined the essential issues of human capital attraction and retention in the regions.

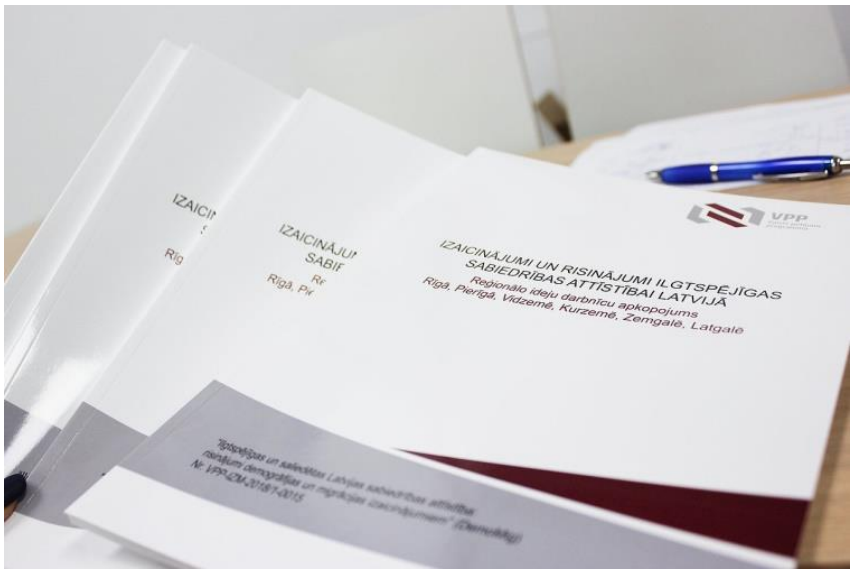

Figure 4. **Policy recommendations leaflet. Challenges and solutions for sustainable societal growth in Latvia. Summary of regional workshops: Riga, Pieriga, Vidzeme, Kurzeme, Zemgale, Latgale** (authors' photography)

Conclusions

This paper aimed to explore regional needs assessment though the application of the World Café method, which strengthens collaboration and personal networks, and encourages mutual learning (Steier et al. 2015; Tan & Brown 2005). According to Stetier et al. (2005) "collective creativity" fosters the widening of local knowledge and broadening of mutual dialogue (Greenwoord & Levin 2007).

The practical application of the method included several originally designed principles such as 1) setting the context; 2) creating a friendly environment; 3) exploring relevant topics; 4) enhancing collaborative creation; 5) blending and connecting different views; 6) co-creating local knowledge; 7) sharing joint discoveries (Brown 2010).

Latvia as a country is experiencing depopulation, and a substantial share of the population is ageing, thus tailor-made policies are crucial. For this reason it is vital to explore and assess local knowledge on demographic and migration challenges within the region. Regional workshops enhance networking and exchange of good practice among scientists, policymakers and regional planning bodies and various groups in society.

The formal outcomes of the project are policy recommendations which have been used for the elaboration of planning documents at the national, regional and local level. Moreover, it has also fostered positive collaborative practices among scientists and policymakers, including scientists who come from various disciplines and found a common platform for the solution of problems.

The main thematic results covered in the regional needs assessment events are synthesised in the policy recommendation leaflet "Challenges and Solutions to Sustainable Societal Growth in Latvia. Summary of Regional Workshops: Riga,

Pieriga, Vidzeme, Kurzeme, Zemgale, Latgale" which has been published and is also available online (ej.uz/DemoMigLU).

Acknowledgement

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Kopsavilkums

Šajā pētījumā tiek izmantota reģionālo vajadzību novērtējuma pieeja. To veido starpdisciplināra pētnieku grupa, kas strādāja pie reģionu vajadzību identificēšanas, izmantojot pasaules kafejnīcas metodi. Tādējādi darba mērķis ir aprakstīt reģionālo vajadzību novērtējumu kā noderīgu pieeju demogrāfisko un migrācijas problēmu izpētei Latvijas reģionos. Projekta rezultāti ir politikas ieteikumi, kurus plaši izmanto plānošanas dokumentu izstrādei nacionālā, reģionālā un vietējā līmenī. Turklāt tas ir veicinājis pozitīvu sadarbības praksi starp politikas veidotājiem un sabiedrību, kā arī starp dažādu nozaru zinātniekiem, kuri tādā veidā rod risinājumus daudzveidīgajiem izaicinājumiem reģionos.

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FACTORS AFFECTING AND DETERMINING LOCAL DEPOPULATION

Faktori, kas ietekmē un nosaka iedzīvotāju skaita lokālo pieaugumu un samazinājumu

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Abstract. This paper analyses the factors that influence and determine the local population growth and decrease in rural areas of Latvia based on population changes at micro level (1x1 km square grid areas) in 2000–2018. Quantitative analysis of the spatial structure of the population was carried out in three reference territories. Results suggest that the proportion of territories with population increase in Latvian municipalities (2000–2018) has a very strong and statistically significant correlation to population changes (2000–2018) in the respective municipality. This may lead to the conclusion that the influence of other factors on the location of the territories in the spatial structure of the municipality where population growth is observed is not statistically significant.
Keywords: *population geography, population changes, spatial population structure*
DOI: 10.22364/fg.18.2

Introduction

Population shrinkage is a significant problem for Latvia. The main cause of population decrease in Latvia is migration. Migration and its influencing factors are an important area of research in population geography (Bērziņš et al. 2018). The territorial disparities of migration have received the attention of many researchers in Latvia (e.g. Krisjane et al. 2017; Zhitin et al. 2018; Arbidane & Markevica 2016; Göler et al. 2014; Apsite et al. 2012; Krisjane & Berzins 2012) and in the European context (Poot et al. 2008; Hazans 2003; Champion 2008). Migration is influenced by the income gap between economically developed and less developed regions (Harris & Todaro 1970; Greenwood & Hunt 2003; Boyle et al. 1998), agricultural production efficiency and development (Camaioni et al. 2019; Clark et al. 1997; Chomy et al. 2011; Brodzinski 2007), sustainable forestry and rural area development (Yilmaz et al. 2010; Smallbone 2009) and economic benefit for individuals (Sjaastad 1962).

For example, by researching the key factors affecting rural development in Turkey, 12 key factors affecting village development were identified: geographical location, village size, land productivity, land use, active population, poplar production areas, proximity to a river, housing comfort, drinking water characteristics, fertility of the land, cooperation and investment in social infrastructure (Oddershede et al. 2007). The process of studying rural development must use both objective and subjective data, including the views of local leaders (Straka & Tuzova 2016).

Latvia is a country with a high proportion of rural areas: Vidzeme, Latgale and Zemgale are considered rural regions, Kurzeme a transition region, and Pieriga an urban region (Zobena & Ijabs 2015). Latvia is characterised not only by negative long-term net migration, but also by low birth rates and increased life expectancy (Eglīte et al. 2003; Zvidriņš 2006). Internal migration rates in Latvia change from year to year, but on average they reach 2% of the total population of the country (Bērziņš 2011). Tourism and agricultural processing, as well as business services (Vēveris et al. 2007) and ecosystem services (Ozoliņš et al. 2015), are becoming important drivers of the economic development of rural areas.

The aim of the study was to identify the factors that influence and determine local population change in rural areas of Latvia.

Data and methods

The data of the Central Statistical Bureau of Latvia (CSB) on population changes were used in the course of the work. For detailed map comparisons, 6th cycle orthophoto maps, topographic maps, soil maps and CSB maps were used. For the analysis of the spatial structure of the population of the municipalities, a square grid which divides Latvia into 1x1 km squares was used. For each municipality included in the study, only those squares which are mostly within the territory of the municipality were counted.

Cartographic software (ESRI ArcGIS) was used to visualise the results of the work and to prepare the images.

Results

According to the results obtained during the research, no statistically significant set of parameters (soil type or fertility, distance to a road, distance to the nearest city, etc.) was identified in relation to population changes at the micro level (1x1 km square grid areas). Observations in several regions (Skriveri, Ozolnieki, Jelgava, Olaine, etc.) did not reveal any identifiable correlations that would allow for generalising about the causes of small population changes in settlements.

In the further course of the work, quantitative analysis of the spatial structure of the population was carried out in three reference territories. Dagda, Aglona and Kraslava municipalities (Figure 1) were selected as territories with significant population decline in 2000–2018. Aizkraukle and Skriveri municipalities were selected as areas with average population decline and Kekava, Salaspils and Stopini municipalities were selected as areas with population increase.

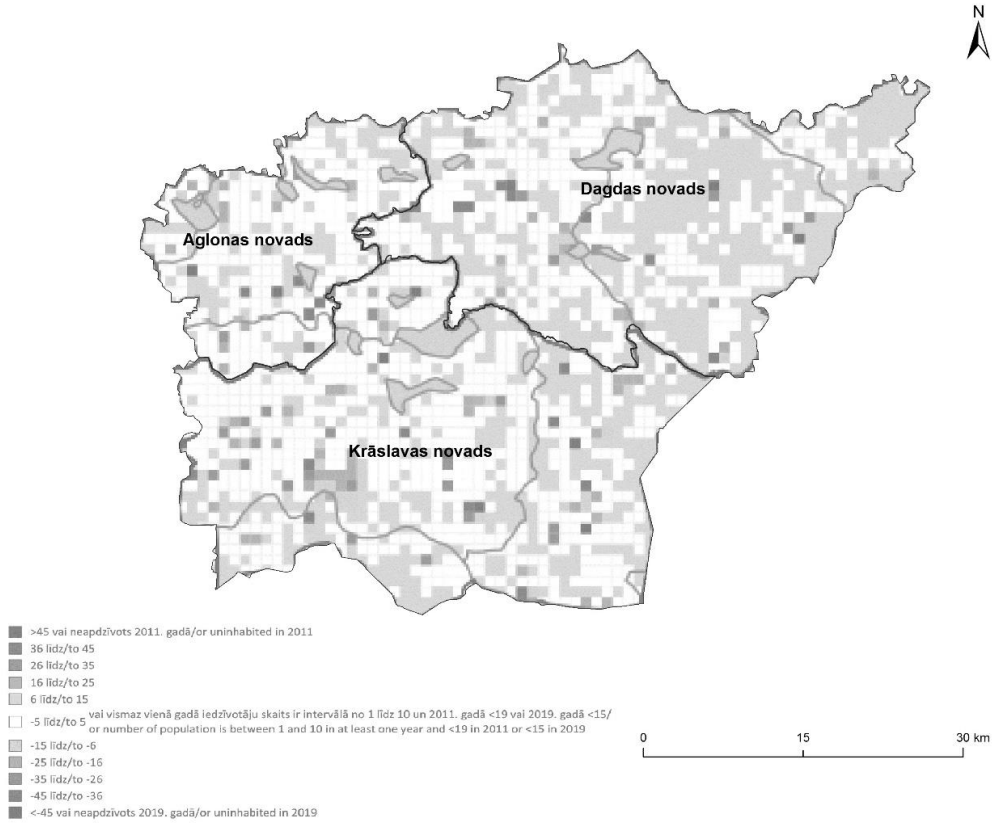

Figure 1. **Population changes in 1x1 km square grid areas between 2000 and 2018 in Dagda, Aglona and Kraslava municipalities** (authors' figure based on CSB data)

In Dagda, Aglona and Kraslava municipalities (Figure 1), approximately 30 to 50% of the surveyed area is uninhabited (forests, swamps, etc.). Only about one-tenth of the area experienced population decline. This happened mainly in areas with high population density.

Comparing the changes in the spatial structure of the population in municipalities with a significant decrease in the population, the following results were obtained: between 2000 and 2018 the population of Dagda municipality decreased by 40.4%, and the population increased only in 1.4% of the populated area; in Aglona municipality these rates are -37.4% and 1.6% respectively; and in Kraslava municipality -35.5% and 2.0% respectively (Table 1).

Table 1. **Population changes between 2000 and 2018 and changes in the spatial structure of the population in 1x1 km square grid areas between 2000 and 2018 in Dagda, Aglona and Kraslava municipalities** (based on CSB data)

Statistical characteristic	Aglona municipality	Dagda municipality	Kraslava municipality
Population at the beginning of 2000	5549	11178	22900
Population at the beginning of 2018	3309	6992	14542
Population changes 2018/2000 (%)	-40.37	-37.45	-36.50
Number of spatial squares	386	953	1101

Statistical characteristic	Aglona municipality	Dagda municipality	Kraslava municipality
Number of spatial squares without population	99	452	351
Number of spatial squares with population	287	501	750
The number of spatial squares in which the population increased	4	8	15
The number of spatial squares in which the population decreased	33	67	97
The percentage of populated spatial squares in which the population increased	1.39	1.60	2.00
The percentage of populated spatial squares in which the population decreased	11.50	13.37	12.93

In Aizkraukle and Skriveri municipalities, 30–50% of the study area is uninhabited (forests, swamps, etc.), but in about a quarter of the area the population has decreased. This happened mainly in areas with high population density. In about one-tenth of the area the population increased.

Comparing the changes in the spatial structure of the population in the municipalities with an average decrease in population, the following results were obtained: the population of Aizkraukle municipality decreased by 21.9% between 2000 and 2018, while in 20.8% of the populated area the population increased; in Skriveri municipality these rates were -17.3% and 8.7% respectively (Table 2).

Table 2. **Population changes and changes in the spatial structure of the population in 1x1 km square grid areas between 2000 and 2018 in Aizkraukle and Skriveri municipalities** (based on CSB data)

Statistical characteristic	Aizkraukle municipality	Skriveri municipality
Population at the beginning of 2000	10414	4082
Population at the beginning of 2018	8130	3366
Population changes 2018/2000 (%)	-21.93	-17.54
Number of spatial squares	100	102
Number of spatial squares without population	47	33
Number of spatial squares with population	53	69
The number of spatial squares in which the population increased	11	6
The number of spatial squares in which the population decreased	13	18
The percentage of populated spatial squares in which the population increased	20.75	8.70
The percentage of populated spatial squares in which the population decreased	24.53	26.09

In Kekava, Salaspils and Stopini municipalities, most of the area is populated (i.e., almost all spatial squares in Stopini municipality). The population of these municipalities has increased in most areas. Comparing the changes in the spatial structure of the population in the municipalities with the population increase, the following results were obtained. Between 2000 and 2018 the population of Kekava municipality increased by 46.2% and the population increased in 47.3% of the populated area. In Stopini municipality these rates are 51.1% and 52.1%, while in Salaspils they are - 5.3% and 45.7% respectively (Table 3).

Table 3. **Population changes between 2000 and 2018 and changes in the spatial structure of the population in 1x1 km square grid areas between 2000 and 2018 in Kekava, Salaspils and Stopini municipalities** (based on CSB data)

Statistical characteristic	Ķekava municipality	Salaspils municipality	Stopiņi municipality
Population at the beginning of 2000	15762	21425	6942
Population at the beginning of 2018	23042	22555	10492
Population changes 2018/2000 (%)	46.18703	5.274212	51.138
Number of spatial squares	270	122	49
Number of spatial squares without population	103	30	1
Number of spatial squares with population	167	92	48
The number of spatial squares in which the population increased	79	42	25
The number of spatial squares in which the population decreased	23	13	6
The percentage of populated spatial squares in which the population increased	47.31	45.65	52.08
The percentage of populated spatial squares in which the population decreased	13.77	14.13	12.50

Conclusion

Internal migration analysis at the regional level indicate that the desire to improve quality of life is the main motive behind the change of residence.

From the obtained results of the spatial structure analysis of the population in the reference territories, it could be hypothesised that the proportion of territories with population increase in Latvian municipalities (2000–2018) has a very strong and statistically significant correlation to population changes (2000–2018) in the respective municipality.

This may lead to the conclusion that the influence of other factors on the location of the territories in the spatial structure of the municipality where population growth is observed is not statistically significant.

Kopsavilkums

Rakstā analizēti faktori, kas ietekmē un nosaka vietējo iedzīvotāju skaita pieaugumu un samazināšanos Latvijas lauku novados, pamatojoties uz iedzīvotāju skaita pārmaiņām mikrolīmenī – analizējot regulāra režģa 1x1 km tīkla pārklājumu 2000. - 2018. gadā. Iedzīvotāju telpiskās struktūras kvantitatīvā analīze tika veikta trīs etalonteritorijās. Rezultāti liecina, ka teritoriju īpatsvaram ar iedzīvotāju skaita pieaugumu Latvijas novados (2000–2018) ir statistiski nozīmīga korelācija ar iedzīvotāju skaita pārmaiņām (2000–2018) attiecīgajā novadā. Autori tālākiem pētījumiem izvirza hipotēzi, ka citu faktoru ietekme uz teritoriju izvietojumu pašvaldības telpiskajā struktūrā, kurā tiek novērota iedzīvotāju skaita palielināšanās, varētu nebūt statistiski nozīmīga.

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SUBURBANISATION CHARACTERISTICS IN THE VICINITY OF RĪGA AFTER TRANSITION

Suburbanizācijas procesa nevienmērīgās izpausmes Rīgas apkārtnē

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Abstract. After the fall of socialism, the most pronounced changes in the spatial structure of the population have been caused by suburbanisation. These changes have been especially notable since the end of the transition period. Therefore, the aim of this research was to characterise the features of suburbanisation in the vicinity of Rīga after transition. Characteristics of suburbanisation were analysed based on the share of and number of people moving out of Rīga among all people moving. This was done for two periods – 2000 to 2011, and 2011 to 2019 – "the second of which has been less studied. The results showed that there were significant differences between the three share groups – a high proportion often went hand in hand with a large number of suburbanites. On the other hand, the differences between agglomeration and non-agglomeration areas were less clear-cut, as there were significant differences in the number of people previously living in Rīga and its changes, while there were no significant differences in the share for the first stage and share changes.
Keywords: *movers, suburbanisation intensity, Rīga agglomeration*
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Introduction

Since the end of the socialist period in Central and Eastern Europe, the most pronounced changes in the spatial structure of the population have been associated with suburbanisation in large urban regions (Gentile et al. 2012; Stanilov and Sykora 2014; Kurek et al. 2019). Conversely, it has become an important topic in many post-socialist states of the region. Previous studies have shown that changes are more pronounced in agglomerations of capital cities (Novak and Sykora 2007; Ahas et al. 2010; Novotny 2016). At the same time, research results indicate that development intensity is not uniform across all regions (Couch et al. 2007; Stanilov 2007; Egedy et al. 2017). That can also be applied to the areas surrounding Rīga (Krišjāne and Bērziņš 2012).

Given the changes that have taken place and the current situation, it is important to pay attention to the driving forces behind them. Several studies have focused on suburbanisation (e.g. Kok and Kovacs, 1999 Tammaru et al. 2004; Hirt 2007) but very few studies have been conducted in recent years (Galka and Warych-Juras 2018; Ourednicek et al. 2019). Also, there seem to be an absence of papers that highlight the situation in areas just outside agglomerations. Consequently, the aim of this study is to characterise the features of suburbanisation in the vicinity of Rīga after transition. Two research questions are put forward – What is the impact of suburbanisation in terms of the share and number of people moving (further on, mainly referred to as "movers"),

both overall and for agglomeration and non-agglomeration territories separately? How did the situation differ between the two periods chosen for this study?

The particular time periods for this study were selected based on several aspects. First, the development of suburban areas and agglomerations after the collapse of socialism are divided into two stages: the transitional period of the 1990s and the development after the year 2000 (after the transition period). In the Baltic States, population growth has been much more pronounced in the new millennium (Leetmaa et al. 2009; Krišjāne et al. 2012). Second, the first period, from 2000 to 2011, includes both the most intensive suburbanisation (up to 2007) and the crisis period. The second period, meanwhile, includes the last stages of the crisis, the post-crisis phase and the most recent situation and has been less studied.

Data and methods

Central Statistical Bureau (CSB) data on population migration between territorial units (TUs), according to the borders existing in early 2019, was used to compare the situation on two dates. The following dates were used in this study: 01.01.2000–01.01.2011 and 01.01.2011–01.01.2019. This dataset was calculated using geospatial data, more specifically address point coordinates and the TU boundaries specified by the State Land Service. As a result, population changes which were the result of TU boundary changes were reduced. Another data set that was utilised was the cause of population changes in TUs (again, according to the borders existing in early 2019), comparing the situation on the two dates. From this data source, the total number of people who have changed their place of residence (within Latvia) was used. The same dates were used as in the case of internal migration data.

The study used descriptive analysis and non-parametric median tests to gain insights into the features of suburbanisation in the vicinity of Rīga after transition. The former method was used to briefly describe the groups, while the latter was used to determine whether there were significant differences between groups. The intensity of suburbanisation was calculated for the two aforementioned periods. For this study it was defined as a share, calculated by comparing the number of inhabitants who moved from Rīga to a particular place of residence sometime during a given period to all persons who were living in a different place of residence from where they had lived on the previous date. For the purposes of analysis, TUs were divided into three groups based on the total share of people moving, ranging from high (over 60%) to low (less than 30%). This distribution was chosen since it enabled easier comparison and analysis. The differences were looked at for the three groups (the number of movers), in agglomeration (defined by Skadiņš et al. 2019) and non-agglomeration areas (numbers and share), all of which were within 60 km of Rīga. This distance has been historically considered as the main sphere of the capital's influence (Krišjāne and Bērziņš 2009). Overall, 71 TUs were included in the analysis.

Results

As can be seen in Figure 1, during the first period, the majority of TUs (30) had a high share of former Rīga residents. In absolute terms, though, there were considerable differences between them. Territories close (25 to 30 km) to the capital had an absolute minimum of over 1000 movers from Rīga. Other TUs further away had (sometimes even noticeably) a lower influx of former Rīga residents. Nonetheless, this group tended to have more movers – 24 out of 30 were above the median value of 215. Three non-agglomeration areas – Sēja and Skulte parishes and Vangaži town – had a share of more than 60%, with the number of movers above the median value.

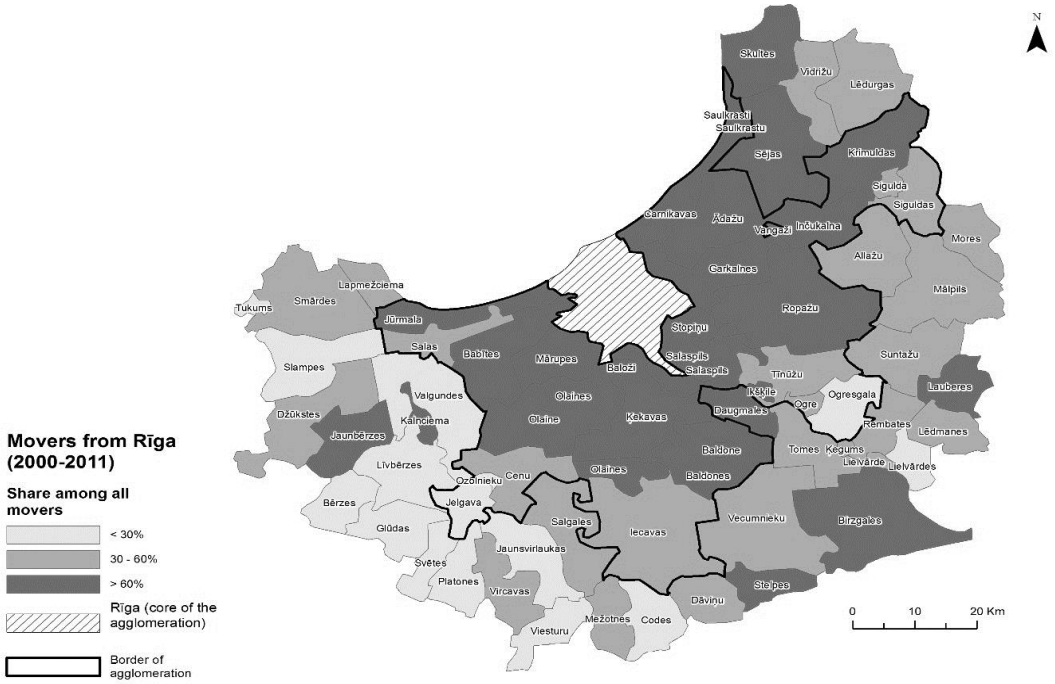

Figure 1. **Share of movers from Rīga among all movers, from 2000–2011** (author's calculations, based on CSB 2019a, 2019b)

The medium-intensity group consisted of 25 TUs, six of which were part of the agglomeration. All of the agglomeration TUs, except Sala parish, saw an influx of movers larger than the median value. Another three TUs in non-agglomeration areas (the town of Lielvārde, and Smārde and Vecumnieki parishes) had a number of movers exceeding the median. Despite having a smaller share and generally lower numbers, movers from Rīga were still the prevalent group in nearly all areas.

Low intensity (below 30%) and generally low numbers were characteristic of 16 TUs, most (13) of them being outside of the agglomeration, particularly those to the west and southwest of the agglomeration. This can be explained by the movement of inhabitants from Jelgava and Tukums to the nearby parishes. Jelgava, Tukums and Ozolnieki parish were the only ones in which the number of former Rīga residents was higher than the median value. TUs in this group either had a more pronounced connection with a TU other than Rīga or the flows were quite heterogenous.

There were statistically significant differences (further on referred to as "significant differences") between the three share groups when it came to the number of movers (Asymp. Sig. < 0.01). As for the agglomeration/non-agglomeration divide, all but two agglomeration areas had a number of movers which was larger than the median value. Quite the contrary: just six areas outside of the agglomeration either matched or surpassed it. Simultaneously, 10 agglomeration TUs had a share below the median value (55.1%), while 14 non-agglomeration TUs were above it. Consequently, the areas differed significantly for the former indicator (Asymp. Sig. < 0.01) but did not for the latter (Asymp. Sig. = 0.06).

In the next period, the number of TUs with a high share of suburbanites was smaller than before (Figure 2). In 23 TUs, at least 60% of all movers were former Rīga residents; 18 of those TUs belonged to the agglomeration. In this share group, only Daugmale and Krimulda parishes had less than the median value of 134 movers.

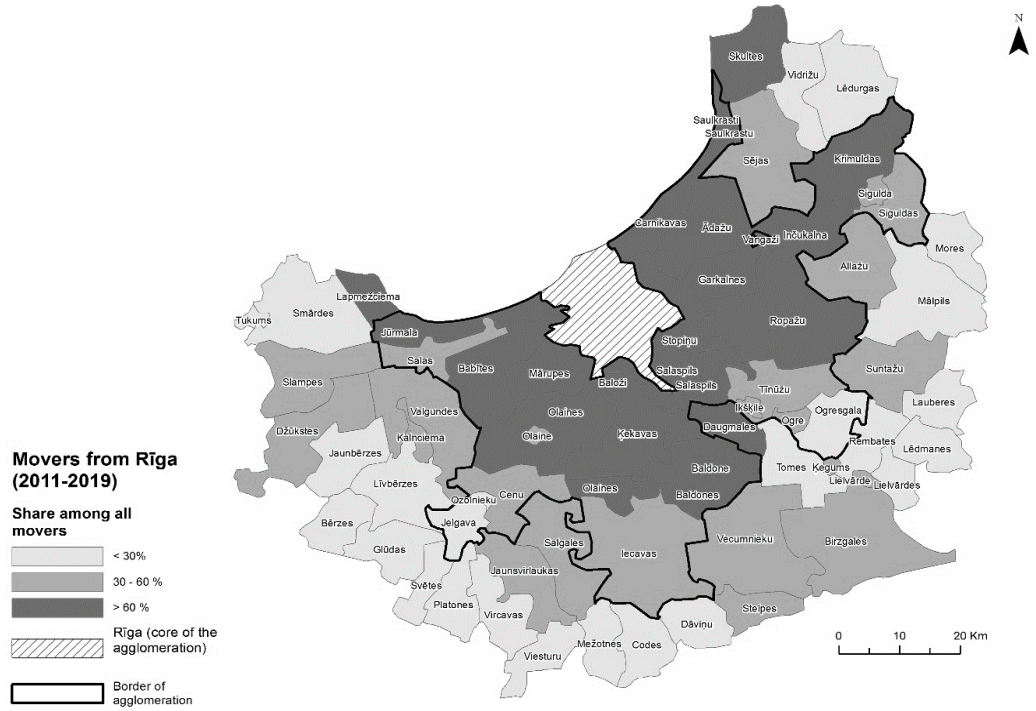

Figure 2. **Share of movers from Rīga among all movers, from 2011–2019** (author's calculations, based on CSB 2019a, 2019b)

The size of the medium-intensity group decreased to 23 TUs; however, the number of agglomeration areas went up to nine. Still, most TUs (13) had a number of movers equal to or below the median. Of those that surpassed the median value, all but two were agglomeration TUs (the same as for the previous period). Once again, Sala parish was the lone agglomeration TU which did not surpass the median value.

The group which included the TUs with the lowest intensity increased to 25 members and still included the same three agglomeration areas. Four of the TUs had values above the median, with Smārde parish being a new addition to this group. The movement of former inhabitants from Jelgava and Tukums to nearby parishes

continued to impact the situation. Several of the TUs which had a high share and low numbers in the previous period were now in the low group.

Again, there were statistically significant differences between the three share groups when it came to the number of movers (Asymp. Sig. < 0.01). This time agglomeration and non-agglomeration areas differed significantly for both the share and the number of movers. A total of 28 agglomeration TUs surpassed the median number of movers, while only seven non-agglomeration TUs did so. The distribution of groups based on share differed slightly: 26 above the median in agglomeration areas and nine for TUs outside of it.

As for the overall changes, they had various degrees of difference. The agglomeration areas saw a more significant drop, with just 5 of 31 TUs being above the median value (a decrease of 63 movers); among the non-agglomeration areas, 30 out of 40 had a value above the median. The median test indicated significant differences (Asymp. Sig. < 0.01). The situation with regard to share change was rather contrary – in this case, agglomeration TUs were less prone to experiencing notable changes. Conversely, 19 out of 31 TUs had a value larger than the median (a decrease of 1.8%), with only 16 non-agglomeration TUs surpassing it. That was not the only difference, as the median test indicated that the disparities were not significant (Asymp. Sig. = 0.175).

Only six out of the 71 TUs analysed had seen an increase in number of movers from the capital, with two of those being outside of the agglomeration. In these TUs, though, the increase was less sizeable than in the agglomeration TUs – except in Cenu parish, where the number of movers increased by 10. Close to half of all TUs saw a growth in their share of movers – 16 apiece in each group. Thus, despite most TUs either experiencing a negative (39) or a positive (five) change for both indicators, 25 TUs saw the number of movers go down and shares increase. This points to considerable changes in other internal migration flows. Typology based on the changes of indicators can be seen in Figure 3, and also includes a TU where the number of movers had not changed, while the share had increased. Territories outside the agglomeration were more likely to have a higher increase (with 10 out of 16 exceeding the median value of 3.5%). Yet the median test indicated that the disparities were not significant (Asymp. Sig. = 0.157).

One significant aspect, which was not related to share groups or the agglomeration/non-agglomeration divide, concerned changes in TUs bordering Rīga, in comparison to the rest of research area. Carnikava parish experienced the largest increase in the number of movers, while the other nine TUs saw a decrease. In seven of those cases it shrank by at least 1000. The results of the median test indicated that the changes in these TUs were significantly different to those in all the other ones which saw a decrease (Asymp. Sig. < 0.05). Still, despite this change, all of them remained in the high share group.

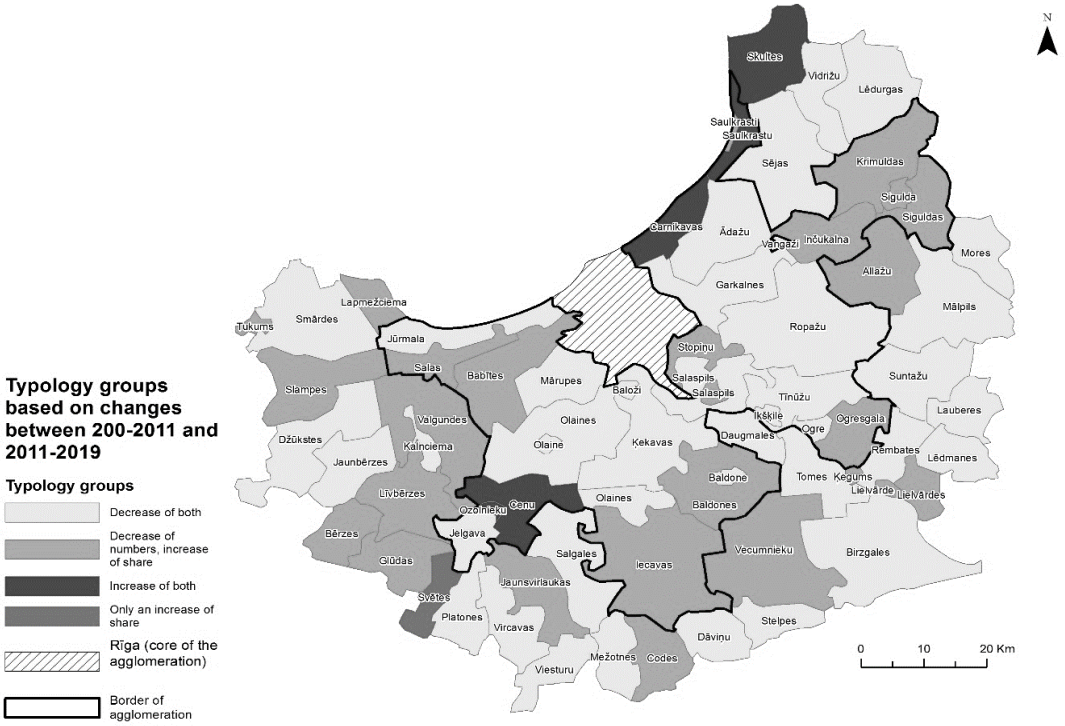

Figure 3. **Typology groups based on changes between 2000–2011 and 2011–2019** (author's calculations, based on CSB 2019a, 2019b)

While the impact of suburbanites on the flows has been somewhat ambiguous, from a sheer numerical standpoint, suburbanisation has slowed down over time, with very few exceptions. This is contrary to developments in Czechia, where, after the financial crisis period, the intensity of in-migration increased in all agglomeration zones (Ourednicek et al. 2019). The situation in Rīga agglomeration is somewhat similar to the situation in the functional urban areas of Poland. There, during the post-crisis period the overall tendency has also been negative, although the decrease has been slight (Kurek et al. 2019). The reasons for such development could very well be related to those provided by Kurek et al. (2019, 161): loans being more difficult to obtain or the impact of certain demographic processes.

Conclusions

The results highlight that the share and number of movers to agglomeration TUs tended to be greater than to non-agglomeration TUs, and test results showed that the significance increased over time. Also, a higher share of movers usually meant a significantly higher number of movers (i.e. above the median value).

Another aspect elucidated by the findings of the study was that percentage decrease of share were less common. The most significant decreases in numbers were found in the agglomeration and the decrease was statistically significant in nearly all TUs bordering the capital. Non-agglomeration territories, meanwhile, underwent an opposite change: a lesser numerical decrease and a larger drop in the share of people moving. Nevertheless, there were not significant differences in the share changes.

These conclusions emphasise the necessity of focusing on the agglomeration alone. Another aspect that should be considered is the analysis of flows. This study focused on movers from Rīga and while they tended to account for the majority of movers (especially in the agglomeration areas), a relatively large proportion of the flows are still unexplored. The share changes showed that shifts have clearly occurred for other groups too. Therefore, to develop a full picture of internal migration patterns to the Rīga agglomeration, additional studies focusing on movers within the agglomeration and from the rest of Latvia will be needed.

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Kopsavilkums

Pēc sociālisma perioda beigām visizteiktākās pārmaiņas iedzīvotāju telpiskajā struktūrā ir izraisījusi suburbanizācija. Šīs pārmaiņas ir bijušas īpaši izteiktas pēc pārejas perioda. Tāpēc šī pētījuma mērķis bija raksturot suburbanizācijas iezīmes Rīgas apkārtnē pēc pārejas perioda. Tās tika analizētas, ņemot vērā iepriekš Rīgā dzīvojošo iedzīvotāju īpatsvaru starp visiem dzīvesvietu mainījušajiem un to skaitu. Tas tika veikts diviem posmiem – no 2000. līdz 2011. gadam un no 2011. līdz 2019. gadam, kas ir mazāk pētīts posms. Rezultāti parādīja, ka starp īpatsvaru grupām bija būtiskas atšķirības – augsts īpatsvars bieži vien nozīmēja arī lielu dzīvesvietu mainījušo skaitu. Turpretī aglomerācijas un ārpus aglomerāciju teritoriju atšķirības nebija tik nepārprotamas, jo saistībā ar iepriekš Rīgā dzīvojošo skaitu un tā pārmaiņām pastāvēja būtiskas atšķirības, kamēr pirmā posma īpatsvaru un pārmaiņu ietvaros tādas nebija.

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REGIONAL HUMAN CAPITAL DISEQUILIBRIA: THE CASE OF YOUTH MIGRATION IN LATVIA

Reģionālā cilvēkkapitāla nelīdzsarotība: Latvijas jauniešu migrācija Latvijā

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Abstract. Riga stands out within Latvia as a significant pool of economic and education-related opportunities. Students and young people are traditionally more mobile and move towards destinations where self-advancement is accessible. Thus, this study aims to describe the human capital disequilibria in the regions of Latvia by analysing youth in the age group from 15 to 34 years and making a comparison between the years 2011 and 2018. The backbone of the study is an analysis of changes in regional unemployment rates and changes in the number of young people in certain regions outside the capital, as well as the general trend for the proportion of young people to decrease in some regions since 2011. The main research questions addressed are: how can the core-periphery model be applied to the regions of Latvia, and to what extent do economic opportunities explain regional inequality? The results indicate that Riga is a core, geographically, and the functionally related regions of Pieriga and Zemgale are semi-peripheral regions. However, the regions of Vidzeme, Latgale and Kurzeme are "places of lower rank" or peripheral regions, which are losing young people in the competition both with the core areas within the country and with other attractive destinations abroad.
Keywords: *youth mobility, regions, unemployment, youth population, Latvia*
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Introduction

Economic development and success for countries and regions largely depends on human capital resources. Young people are an essential asset for, firstly, the sustainability of the educational system; secondly, the sustainability of the employment system; and, thirdly, for demographic stability and reproduction. Thus the migration flows of youth have become an important field of research for various stakeholders in understanding the push and pull factors for youth migration and in developing solutions for demographic issues. Considering that migration outcomes are scale-specific, it is very important to focus on regions, and in some cases on sub-regions within them. The regional dimension is particularly relevant but often neglected: for example, Bartlett and Prica (2013) show evidence of the existence of core regions, peripheral regions and super-peripheral regions, while King et al. (2014) establish a relationship between the position of the region, and migration and mobility patterns.

There are numerous studies on core-periphery relationships within the EU (Pain 2008; Magone et al. 2016; Lulle 2019; King 2019). Traditionally, the core-periphery model is described through the ongoing process of uneven economic

opportunities and the formation of specific social and political conditions (King 2019) drawing potential migrants to more prosperous spatial units. It has long since been discovered and re-examined that power relation between core and peripheral territories are asymmetrical and increase social inequality (Seers 1979; King 2015; King 2019).

The British human geographer Russell King provides a categorisation of the core-periphery model within the EU. He firstly points to the importance of information flows, which are directed from the central parts to the more distant ones at the same time as a counter-flow of geographic mobility takes place from the peripheries to regional economic centres. Thus, according to Kuus, peripheries are "places of lower rank" (Kuus 2013; Lulle 2019).

Studies have also been done on the Baltic region. The case of the core and periphery relationships among the regions in Europe has been examined (Lulle 2019), categorisation of the regions has been carried out by looking at socio-economic disparities (Kebza 2019), regional demography in Latvia has been examined (Krisjane and Krumins 2019; Krumins et al. 2020), migration trends to and from the regions of Latvia have been studied (Krisjane and Bauls 2007), changing patterns of urban migration in Latvia have been highlighted (Krisjane et al. 2010), geographical mobility of the workforce in Latvia has been studied (Krisjane et al. 2007), labour-specific problems of the labour market in regions of Latvia have been examined (LLU 2007), and the capacity of the regions has been studied, taking into account regional economic activity in the period 1999 to 2004 (Zobena 2005).

It is also vital to examine the role of each region; thus, the idea of escalator regions has been explored. The central hypothesis of the escalator region (Fielding 1994; Champion 2011) lies in the idea that these regions offer better labour market opportunities as well as income levels compared to other regions without such opportunities. In-migrants to those regions can obtain faster career growth than elsewhere (Ham et al. 2012). The model consists of three stages, the last of which is devoted to the stepping off the escalator strategy, which most often is related to personal priorities at that particular life stage. Later, the idea of the “escalator effect” (Gordon et al. 2015) was elaborated, which refers to migrants residing in particular regions or urban agglomerations experiencing a rapid increase in the size of the labour market. The effect involves wage growth, accumulation of human capital and job matching (Velthuis et al. 2019, Gordon et al. 2015; Newbolt 2015; Glaeser and Mare 2001).

At a more detailed scale, there are short-term and long-term implications for regions of in-migration and out-migration. Of particular importance are the net human capital outcomes (brain gain, brain drain, etc.), as well as longer-term demographic stability and sustainable birth rates.

While necessary for individuals, the mobility of young people has significant implications for the efficient labour market system and for regional disequilibria.
In order to see if Latvia is currently characterised by regional disequilibria and to test the core-periphery model, the following research questions are considered:

1. How could the core-periphery model be applied in the case of Latvia and to what extent does it explain regional disequilibria?
2. Does regional inequality in economic opportunities influence youth migration in Latvia?

Data and methods

The study carries out an analysis of the officially available data on the youth population in Latvia. The analysed data sets cover persons aged 15 to 34, and the economic activity and unemployment rates of this age group in the different regions of Latvia. We also used the main trends in emigration and immigration. In addition, the average monthly salary by region was used to see the influence of economic opportunities. This study makes use of the official statistics provided by the Central Statistical Bureau of Latvia. In this analysis, we consider and compare the years 2011 and 2018.

The framework of the data analysis consists of 1) a comparison of the youth population, employability and migration in the years 2011 and 2018 in the different regions of Latvia; 2) a geographical visualisation of youth unemployment and youth mobility in regions of Latvia; 3) a geographical comparison of average monthly salaries in the years 2011 and 2018.

Results: Geographical aspects of youth dynamics and employability in the region

In the last three decades, a negative natural growth and migration rate has significantly changed the demographic structure of Latvia. The number of people aged 15–34 in Latvia has continuously dropping by nearly 50%. Table 1 shows that in the seven years from 2011 to 2018, the number of young people decreased by 109,738 in total, or nearly by 20%. The rapid decrease of young people in the last seven years also reflects changes among economically active people in the age group 15–34. From 2011 to 2018, the number of economically active young people decreased by 61,670 people or by 17%. The largest decrease of young people in total numbers was observed in the largest statistical region of Latvia – Riga region. The Riga region had the most active migration processes as well. Although net migration from 2011 to 2018 was negative, the number of young people aged 15-34 moving to the region (15,907) was nearly the same as to all other regions combined (16,650). At the same time, the number of young people migrating away from Riga region (26,039) was at least two times less than from all other regions combined (56,231).

Table 1. **Youth population aged 15–34, employability, and migration in the year 2011 and 2018 by region** (based on Central Statistical Bureau of Latvia data)

	Riga region	**Pieriga region**	**Vidzeme region**	**Kurzeme region**	**Zemgale region**	**Latgale region**
Youth population						
2011	183,914	102,248	56,945	71,767	70,166	76,041
2018	151,628	84,234	45,198	57,006	55,611	57,666
Growth	*-32,286*	*-18,014*	*-11,747*	*-14,761*	*-14,555*	*-18,375*
Youth employment						
Economically active 2011	132,236	69,047	32,304	43,368	46,533	46,729
Economically active 2018	112,287	58,778	28,554	36,295	38,810	33,823
Unemployed 2011	32,534	15,527	7,129	9,290	12,680	12,372
Unemployed 2018	9,479	48,25	3,289	4,174	3,880	5,906
Growth	*-23,055*	*-10,702*	*-3,840*	*-5,116*	*-8,800*	*-6,466*
Youth mobility						
Immigration 2011–2018	15,907	4,483	2,378	3,284	3,012	3,493
Emigration 2011–2018	26,039	11,492	8,710	12,754	9,203	14,072
Net migration 2011–2018	*-10,132*	*-7,009*	*-6,332*	*-9,470*	*-6,191*	*-10,579*

These results are not surprising, because according to the core-periphery model developed by King (King 2019), we assume that the Riga region corresponds to the core region, which works in two ways. Firstly, as the economic service centre of Latvia, it attracts youth from all other regions of Latvia as well as from abroad for study purposes. Secondly, the higher economic opportunities – including job opportunities – in Riga attract young people who stay there after their studies in Riga and also those who move to Riga after graduation from a peripheral region with fewer opportunities (e.g., Latgale). Our assumption is partly confirmed by the fast recovery of Riga region after the global economic crisis from 2008 to 2012: i.e., between 2011 and 2018 the number of unemployed youth aged 15–34 decreased rapidly – by more than three times (3.4). Moreover, the regions of Pieriga and Zemgale are functionally linked to the core region and show similar patterns of unemployment change (e.g., in both regions the number of unemployed youth decreased by more than three times – 3.2), but the less active in-migration processes there correspond to semi-peripheral regions. The regions of Latgale, Vidzeme and Kurzeme, which are more functionally separated from the core region in our study, correspond to peripheral regions according to King's model. After the economic crisis, the number of unemployed young people in all three regions decreased by no more than 2.2 times and the substantial domination of emigration over immigration characterises Kurzeme, Latgale and Vidzeme: i.e., four (for Latgale) or nearly four times more young people moved away from than moved to those regions between 2011 and 2018.

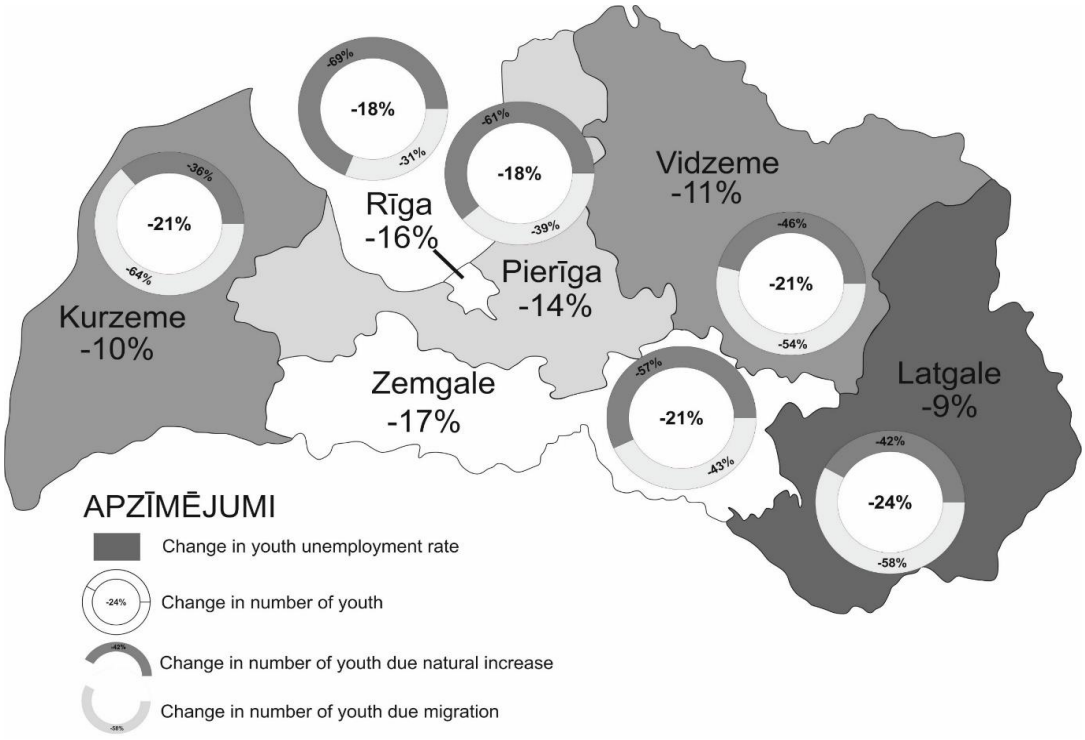

Figure 1. **Regional youth unemployment and youth mobility comparison in regions in 2011 and 2018** (authors' figure based on Central Statistical Bureau of Latvia)

A more detailed analysis of the data and the use of comparative indicators (Figure 1) confirmed our assumption. It revealed that the features of peripheral regions, including fewer jobs and education opportunities and lower wages, explain the domination of migration processes over negative natural growth in Vidzeme, Kurzeme and Latgale. For example, the youth unemployment rate from 2011 to 2018 in all three regions decreased less than in the previously suggested core region (Riga) and the semi-peripheral regions (Pieriga and Zemgale). At the same time in Vidzeme, Kurzeme and Latgale, the greater total decrease in the number of young people Vidzeme and Kurzeme – 21%; Latgale – 24% between 2011 and 2018 was due to negative net migration, i.e., in all three regions 54 to 64% of the total decrease of the number of young people was due to the domination of emigration over immigration. In the core region – Riga – where the decrease in the unemployment rate was more pronounced (-16%) the share of net migration in the total decrease of the youth population in the region (-18%) was significantly less: -31%. Similar patterns, although less pronounced, can be seen in Pieriga and Zemgale – regions suggested by our model as being semi-peripheral regions. Both regions saw a similar decrease in the youth unemployment rate (Pieriga -14%; Zemgale -17%) and a prevalence of natural growth (Pieriga -61%; Zemgale -57%) over net migration (Pieriga -39%; Zemgale -43%) and the total decrease of the number of young people in the region (Pieriga -18%; Zemgale -21%).

Table 2. **Average monthly gross salary by regions, 2011 and 2018** (based on Central Statistical Bureau of Latvia data)

Year/Region	Riga region	Pieriga region	Vidzeme region	Kurzeme region	Zemgale region	Latgale region
2011	757	622	518	559	547	468
2018	1129	949	803	858	848	701
Compared to Riga region in 2011		82%	68%	74%	72%	62%
Compared to Riga region in 2018		84%	71%	76%	75%	62%

Although the evidence from Table 2 only partly complements our core-periphery model, it does, however, support the hypothesis included in the model that in regions with less economic opportunities, emigration will predominate over immigration. The data clearly shows that the low monthly salaries in Latgale compared to Riga region in 2011 and 2018 did not only have a general effect on the decrease in the youth population (-24%) from 2011 to 2018 but also on the predominance of the net migration rate (-58%) over the natural growth rate (-42%) in the total decrease of the number of young people in the region. We can observe similar patterns in Vidzeme, where the average monthly salary is the second lowest in Latvia and where migration processes predominate over natural growth in the total decrease in the number of young people in the region. The evidence from Table 2 shows that further work and more detailed analysis is necessary to explain the case of Kurzeme according to the core-periphery model. Although the average monthly salary in Kurzeme region in 2011 and 2018 is the third-highest in Latvia; however, the majority of the total decrease of the number of youth in the region is due to the higher net migration of youth (-64%) compared to other regions in Latvia. Finally, the mean monthly salaries in Pieriga and Zemgale also confirm that both regions correspond to semi-peripheral regions. The difference in average monthly salary between Riga and both semi-peripheral regions (no more than 25%) in 2018 reflects a higher share of net migration in the total decrease of the number of young people in both regions than in Riga, but significantly less than in the peripheral regions, Vidzeme and Latgale.

Conclusions

Our results show that the core-periphery model can be applied in the case of Latvia. Three leading indicators were used to compare regions and to develop the core-periphery model: 1) share of net youth migration in the total decrease of young people; 2) changes in the youth unemployment rate; 3) the average monthly gross salary. The results indicate that Riga can be identified as the core. In Riga the share of net youth migration in the total decrease of young people is the smallest of all the regions (-31%). Riga region also had the highest average monthly gross salaries in 2011 and 2018 and the second-highest decrease in the unemployment rate between 2011 and 2018 (-16%). Our evidence shows that regions that are geographically and functionally related to Riga – Pieriga and Zemgale are to semi-periphery. The share of net youth migration in the total decrease of youth for both regions is less than 50%; the

decrease in the youth unemployment rate is similar to Riga (more than -14%), and average monthly gross salaries differ from Riga by no more than 25%. We assume that Vidzeme, Latgale and Kurzeme are "places of lower rank" or peripheral regions which are losing their young population in the competition both with the core parts within the country and with other attractive destinations abroad. The average monthly gross salaries in Vidzeme and Latgale are more than 25% lower than in Riga and the change in the unemployment rate from 2011 to 2018 was no more than -11% in all three regions.

Finally, the evidence from these results clearly shows that out-migration of youth from regions is tightly linked with opportunities for employment and higher salaries. Respectively, out-migration is higher in regions where the decrease in the youth unemployment rate is lower and where at the same time salaries are lower compared to the core region. Furthermore, our study suggests that a threshold of 50% in the share of youth net migration in the total decrease of young people – i.e. that migration processes are predominating over natural growth – is useful in making a distinction between core and semi-peripheral regions and peripheral regions.

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Kopsavilkums

Rīga un tās apkārtne koncentrē nozīmīgu ekonomisko un ar izglītību saistīto iespēju kopumu, kas izceļas Latvijas un arī Baltijas mērogā. Studenti un jaunieši tradicionāli ir mobilāki un bieži pārceļas uz galamērķiem, kur saskata plašākas iespējas pašattīstībai. Tādējādi pētījuma mērķis ir aprakstīt cilvēkkapitāla nelīdzsvarotību Latvijas reģionos, analizējot jauniešu vecuma grupu no 15 līdz 34 gadiem un salīdzinot laika periodā no 2011. līdz 2018. gadam. Pētījuma pamatā ir analizētas reģionālās bezdarba, jauniešu skaita pārmaiņas reģionos, kā arī dažu reģionu vispārējās jauniešu skaita samazināšanās tendences kopš 2011. gada. Galvenie pētījuma jautājumi ir: kā centra-perifērijas modeli var piemērot Latvijā un cik lielā mērā ekonomiskās iespējas izskaidro reģionālo nevienlīdzību. Rezultāti norāda, ka ar Rīgu kā galveno, ģeogrāfiski un funkcionāli saistītie reģioni ir Pierīga un Zemgale, ko var uzskatīt par pus-perifēriju. Tomēr Vidzemes, Latgales un Kurzemes reģioni ir "zemāka ranga vietas" vai perifērijas reģioni, kas zaudē jauniešus konkurencē gan ar Rīgu, gan citiem pievilcīgiem galamērķiem ārvalstīs.

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LATVIA'S PROGRESS TOWARDS A RETIREMENT SOCIETY: AGEING TRENDS IN LATVIAN MUNICIPALITIES

Latvijas virzība uz pensionāru sabiedrību: novecošanās tendences Latvijas novados

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Abstract. This paper analyses the ageing of the population, which may become one of the most important social changes of the 21st century in the European Union. This work uses statistics from the Central Statistical Bureau (CSB) of Latvia, as well as statistics prepared by the State Social Insurance Agency of Latvia (SSIA). The results suggest that t the economic development and the stabilisation of employment in Riga and Riga region in the second decade of the 21st century was ensured not by generational change or migration, but by the inclusion of members of the population who had previously been economically inactive into the labour market. This may lead to the conclusion that around 2030, the ageing of the population will become one of the most serious problems in Pieriga.
Keywords: *ageing, population structure change, pension recipients, migration, employment*
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Introduction

One of the important directions of modern scientific research in geography is related to structural changes in the population, both analysing how this happens at different spatial levels (Govindaraju 2014) and by identifying possible solutions (Backus et al. 2014). Since migration affects the age structure in migration-affected areas and causes changes in the working-age population, at a global level it is the impact of migration on changes in population structure that is mainly studied (McAuliffe et al. 2017; Stillwell et al. 2016; Arango 2017; Danchev 2018). Similar studies are being conducted at the European level (Rechel et al. 2013; O'Reilly 2015; Brekke 2015; Nica 2015; Wilson et al. 2013; De Vries et al. 2019). Many studies have also been carried out in Latvia, both on migration processes taking place in the territory of Latvia (Apsīte-Beriņa et al. 2019; Burgmanis et al. 2014; Göler et al. 2014), as well as on the manifestations of emigration and immigration (McCollum et al. 2017; Göler et al. 2016; Apsite-Berina 2018).

The ageing of the population may become one of the most important social changes of the 21st century in the European Union. The proportion of people over the age of 60 is currently around 15% in the EU, but this figure is expected to reach 30% by 2050 (Sanderson et al. 2017; Giacalone et al. 2016). Changes in the structure of the population can be predicted to affect labour and financial markets (Maestas et al. 2016), family structures and intergenerational ties (Giacalone et al. 2016), and to have

an impact on future economic indicators (Alho et al. 2006; Zavras et al. 2013; Backus et al. 2014; Juselius et al. 2015; Maestas et al. 2016; Colby et al. 2014).

Ageing trends are mainly studied at the national level (Bloom et al. 2016;), with predictions about ageing trends in the 21st century being expressed (Alho et al. 2006; Sanderson et al. 2017).

The aim of this work was to describe ageing trends among the population of Latvia by comparing the areas surrounding the capital with other regions of Latvia.

Data and methods

This work uses statistics from the Central Statistical Bureau of Latvia (CSB), as well as statistics prepared by the State Social Insurance Agency of Latvia (SSIA) on the number of pension recipients administered and the average (gross) pension payments granted by administrative territory in December of each year (from 2011 to 2018) and in September (for 2019); and on the number of persons socially insured by the SSIA by administrative territory in December of each year (from 2011 to 2018) and in September 2019.

The methodology used by Eurostat (Population Projections 2015) and tested in other scientific publications (Paiders 2019) was used in preparing the forecasts. It was assumed that Latvia's natural growth and relative domestic migration balance in the future would be in line with the trends observed from 2016 to 2019, but that the relative international migration balance would be zero from 2020 onwards.

It was also assumed that mortality in each age group would correspond to the average mortality by age group in the Riga region in 2018.

The projected population was calculated according to the following formula:

$$I_{x+1}=I_x+I_x(D_m+ R_m),$$

where

I_x – population in the given year,

I_{x+1} – population in the following year,

D_m – average relative natural increase between 2016 and 2019,

R_m – average relative balance of domestic migration between 2016 and 2019.

The calculation for the forecast was started using the actual population in 2019.

The projected population in the age group is calculated according to the following formula:

$$I_{x+1}=I_x-I_x *M_m,$$

where

I_x – population in the given year in the relevant age group,

I_{x+1} – population in the following year in the relevant age group,

M_m – average relative mortality (mortality rate per 1,000 people multiplied by 1,000) in the relevant age group.

The projected number of pensioners was calculated according to the linear regression formula:

$P = A + Bx$, where

P – the projected number of pensioners;

$B = \frac{\sum(x-\bar{y})(y-\bar{y})}{\sum(x-\bar{x})^2}$ and A = y – Bx, where

x – observation sequence number,

y – population in the relevant year.

The calculations of the correlation coefficient of the total for pensions were carried out according to the following formula:

$C = \frac{\sum(x-)(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2 \sum(y-\bar{y})^2}}$, where

$\bar{x}$ and $\bar{y}$ – average sample rates.

The significance between pension payments in the regions of Latvia was calculated according to the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

$s^2 = \frac{\sum_{i=1}^{n1}(x_i-\bar{x}_1)^2+\sum_{j=1}^{n2}(x_j-\bar{x}_2)^2}{n_1+n_2-2}$, where

$\bar{x}_1$ and $\bar{x}_2$ – sample means;

s^2 – pooled sample variance;

n_1 and n_2 – sample sizes;

t – Student t quantile with $n_1 + n_2 - 2$ degrees of freedom.

The data processing and calculations required for the work were performed using MS Excel 2016 software, while the computer programme ArcGIS was used to visualise the results and prepare images.

Results

Employment and ageing trends in Riga and Pieriga

According to the CSB data, the total number of people in the age group between 15 and 64 is continuing to decrease in Riga. At the same time, the number of economically active (self-employed and employed people) in the age group between 15 and 64 has stabilised since 2013. In turn, in 2018, the number of unemployed in the age group between 15 and 64 in Riga reached the second-lowest level (21,600 inhabitants) since 1996. The number of unemployed in the age group between 15 and 64 in Riga was lower only in 2007, when the total was 20,900 inhabitants. According to the CSB data, the stabilisation of the economically active and employed population in the age group between 15 and 64 took place as the number of economically inactive people (especially the unemployed) in this age group decreased. As a result, in Riga, the level of economic activity in the age group between 15 and 64 years in 2018 reached a historic peak of 81.2%. The employment rate in Riga in the age group

between 15 and 64 also reached its historical peak in 2018 – 75.8%. In turn, the unemployment rate in Riga in the age group between 15 and 64 years in 2018 was the lowest since 2009 – just 6.6%. The unemployment rate in Riga in the age group between 15 and 64 years was lower only in 2007 and 2008.

In 2018, Riga was approaching its historic peak employment level. Economic development and the stabilisation of employment in Riga in the second decade of the 21st century was ensured not by generational change or migration, but by the inclusion in the labour market of members of the population who had previously been economically inactive.

Migration and employment trends in the Pieriga region

Starting from the mid-1990s, a significant number of Rigans moved from Riga to Pieriga. An important motive for moving out of Riga at that time was the rather poorly developed service system, which is often referred to as the benefits of city living (available communication, shopping and catering services; available entertainment and leisure opportunities, etc.). Assessing conditions in the 21st century, it must be stated that the availability of housing in Riga has significantly improved. This was facilitated by the reduction of the population of Riga, as well as the construction of new residential buildings and the modernisation of old buildings. In addition to this, Riga has developed a system of well-accessible services related to the aforementioned benefits of city living that is at the level of Western European metropolises. In addition, the generation that has grown up in housing around Riga has never felt a lack of living space as their parents did but do strongly perceive the inconveniences that arise from living outside the city, especially the separation from city services.

According to the CSB data, in the Pieriga region, the total number of people in the age group between 15 and 64 years increased from the mid-1990s, reaching a historical peak of 251,400 inhabitants in 2010. In the Pieriga region from 2010 onwards, the total population in the age group between 15 and 64 years tended to decrease. From 2006 onwards, the number of economically active people in the Pieriga region in the age group between 15 and 64 stabilised at a level slightly above 180,000, while the number of employed people stabilised at the level of about 170,000. In 2018, the number of employed people in the Pieriga region in the age group between 15 and 64 years reached the second-highest level (174,300 inhabitants) since 1996. The higher number of employed people in the Pieriga region in the age group between 15 and 64 years was recorded in 2008 (176,200 inhabitants). In turn, in 2018, the proportion of unemployed people in the age group between 15 and 64 years in the Pieriga region reached a historical low of 8.8%.

The stabilisation number of the economically active and employed people in the Pieriga region in the age group between 15 and 64 years took place as the number of economically inactive people in this age group decreased. As a result, the level of economic activity in the Pieriga region in the age group between 15 and 64 years

reached a historic peak of 79.5% in 2018. The employment rate in the Pieriga region in the age group between 15 and 64 years also reached a historic peak of 75.7% in 2018, while the unemployment rate in the Pieriga region in the age group between 15 and 64 years reached a historical low of 4.8% in 2018.

Similar to Riga, in 2018 the Pieriga region was approaching its historic peak employment level. Economic development and employment stabilisation in the Pieriga region in the second decade of 21st century was ensured not by generational change or migration, but by the inclusion in the labour market of members of the population who had previously been economically inactive.

Ageing trends in Pieriga and regions of Latvia

Assuming that 2016-2019 trends in natural growth and internal migration will continue, but that from 2020 onwards the external migration balance is zero, then it can be predicted that the population of Latvia will decrease from 1.92 million at the beginning of 2019 to 1.83 million in 2030 and to 1.70 million in 2050. This scenario is close to Eurostat 2030's recalculated forecasts regarding changes to the population of Latvia, which do not include international migration. If the conditions included in the model are met, then in 2030, there will be 492,000 people in the age group over 65 living in Latvia, of whom 144,000 will be living in Riga and 106,000 in Pieriga. Compared to the beginning of 2019, the total number of representatives of the oldest population group will increase by 0.6% in Latvia by 2030, and by 11.7% in Riga, while in Pieriga by as much as 58.0%". Such significant differences in ageing trends can be explained by the fact that in 2030 the the members of the population of the population who moved to Pieriga at the beginning of the 21st century when they were of working age will have will have become pensioner. Therefore, it can be predicted that around 2030 its aging population will become one of the most serious problems in Pieriga. The number of people in the age group over 65 could increase by more than 60% in Baloži, Stopiņi, Garkalne, Babīte, Ādaži, Saulkrasti, Carnikava and Mārupe municipalities.

Table 1**. The proportion of the population over 65 (%) against the total population in Latvia and the regions of Latvia on 1st January 2019, and the forecast for 2030** (authors' calculations based on data from CSB)

Age groups	**Year 2019 >65**	**Year 2030 >65**
LATVIA	20.3	21.3
Riga	20.4	23.1
Pieriga region	18.1	26.3
Vidzeme region	21.3	17.4
Kurzeme region	21.1	18.7
Zemgale region	19.6	17.7
Latgale region	21.9	19.4

In turn, the opposite trend can be predicted in the rest of Latvia (Table 1). According to the forecast, in 2030 the ratio of the population over 65 to the total population will decrease in all regions of Latvia except Riga and Pieriga. In Riga the population over 65 will increase slightly, but in Pieriga it will increase significantly.

Ageing trends in the regions of Latvia

According to the CSB data, 20% of the population of Latvian were over 65 years of age. At the beginning of 2019, there were 1,187 places in Latvia with a population of more than 50. In 55 of these the proportion of the population aged 65 and over exceeds 30%. The areas with the largest proportion of the population aged 65 and over are 15 densely populated areas which have care facilities for the elderly: in Ziedugrava (92%), Liepkalne school (84%), the Siltais social care centre (82%), Rokaiži (82%), Gatarta nursing home (73%), Mežmalieši (66%), Rauda (64%), Salenieki in Aglona parish (63%), Valtaiķi nursing home (63%), Urga (62%), Landze (61%), Lauciene nursing home (60%), Western Lutriņi (60%), Īslīce nursing home (60%) and Celmene (59%) (CSP publicē, 2020). Since the number of elderly people is proportionally higher in municipalities and parishes where care facilities for the elderly are located than in the neighbouring territories, this limits the possibility for mathematical-statistical methods to be used in the research.

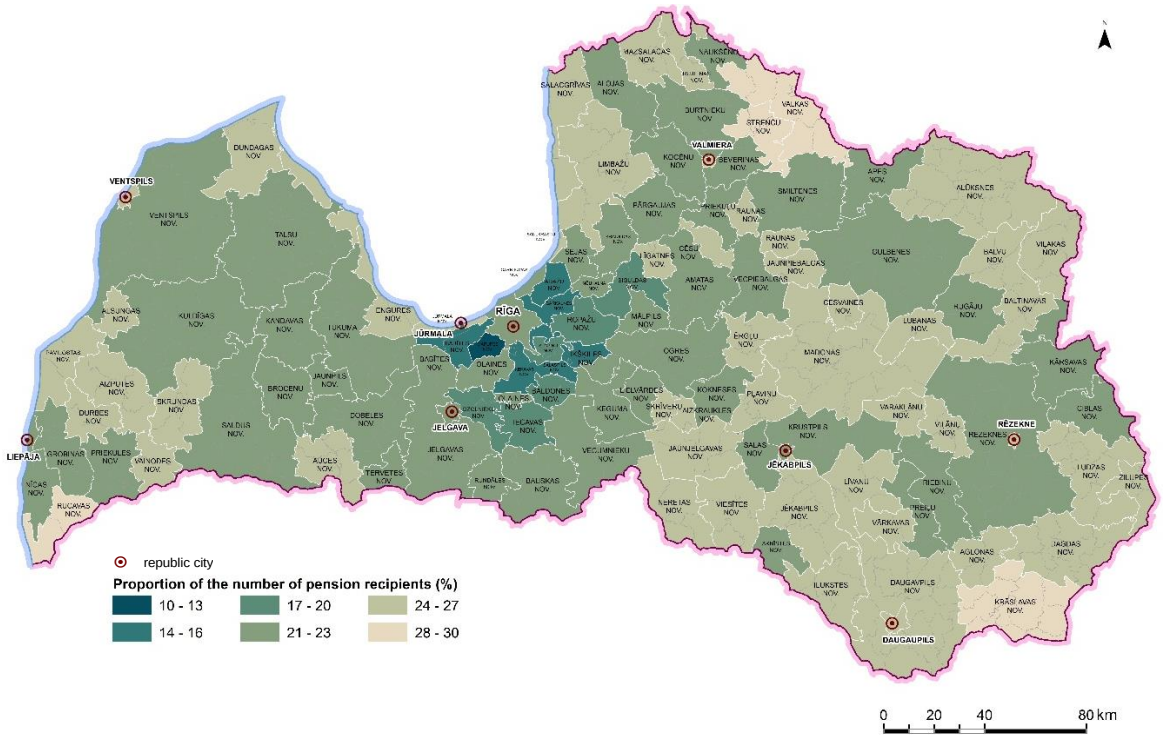

Figure 1. **The proportion of the number of pension recipients (%) in September 2019 against the total proportion of working-age population (15-74) in the regions of Latvia** (authors' calculations based on SSIA statistical data and Envirotech spatial data)

According to data on the location of pension recipients in September 2019 (Figure 1), the ratio of the number of pensioners to the total working-age population in

Pieriga differs significantly from the trends in the rest of Latvia. Forecasts show that the total working-age population of the municipalities in Pieriga in 2030 could decrease to 56% of the total working-age population.

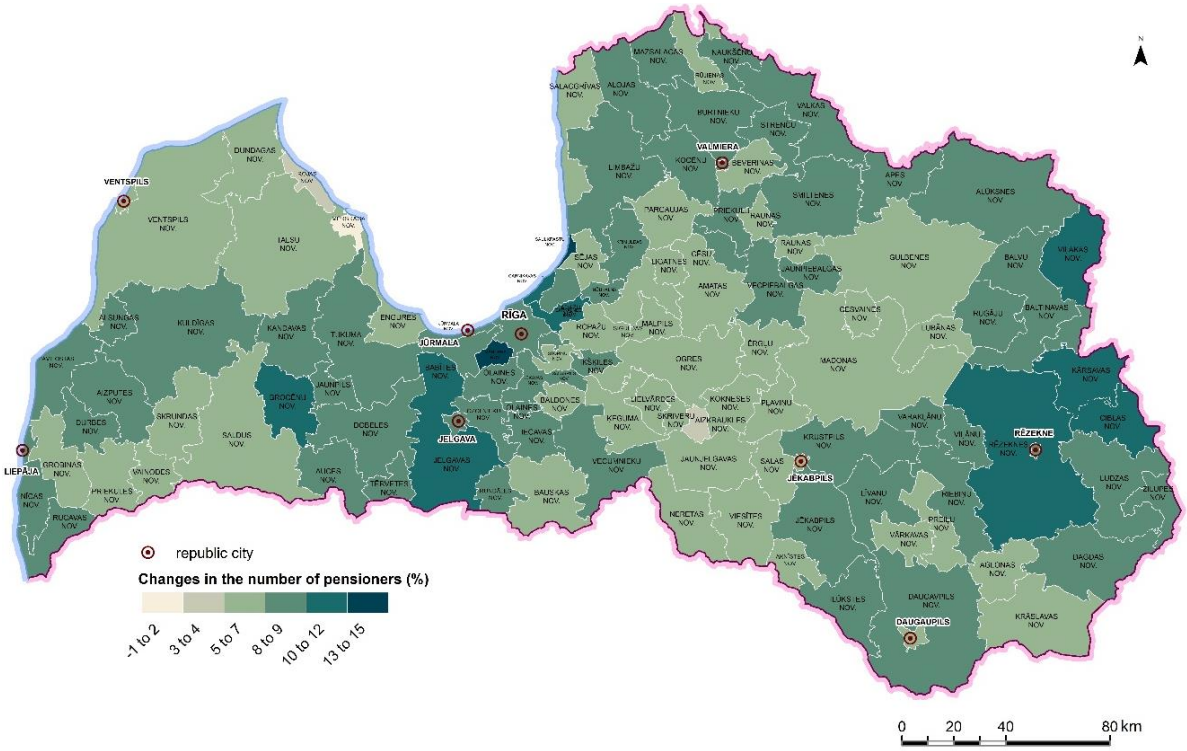

Figure 2. **Changes in the number of pensioners (%) between 2011 and 2019** (authors' calculations based on SSIA statistical data and Envirotech spatial data)

On the other hand, there are both similar and varying tendencies in the share of pensioners" and then add where this applies – e.g. "in different municipalities/regions Carrying out a linear forecast from this indicator, it can be concluded that in 2030, there will be 400,000 pensioners (22.6% of the population) living in Latvia, while in 2050, the total number of pensioners will be 311,000 (21.8% of the population). An increase in the number of pensioners can be forecast both in Pieriga and in the eastern part of Latgale.

The most significant increase in the number of pensioners in the period between 2011 and 2019 (Figure 2) was observed in Mārupe municipality, where the proportion reached 13–15% of the total population", as well as in Brocēni, Jelgava, Babīte, Ādaži and Carnikava municipalities, as well as in some municipalities in Latgale. The only municipality with a negative increase in the number of pensioners was Mērsrags municipality.

When assessing the change in the number of pensioners, the fact that there are care facilities for the elderly in several densely populated areas must be taken into account. For example, in Saldus, Skrunda and Vaiņode municipalities there are the care facilities Lutriņu Rietumos and Valtaiķi – the people living there make up a large proportion of the population of retirement age in those areas.

Average pension payments in the country, which was calculated using data for the period from 2011 to 2018, shows a very close correlation with the indicators of gross domestic product per capita (the value of the correlation coefficient is 0.98). It is less closely correlated with net migration (0.81), life expectancy (in years) (0.88) and and the share of the total population who are economically active (employed people, and non-working people seeking employment) (0.94). Based on the obtained results, it can be concluded that average pension payments in municipalities are significantly influenced by trends in population movement, as there is a tendency for average pension payments to increase as the value of the migration balance increases. The highest level of pension payments in 2019 were observed in areas of Pieriga, where also the population is increasing every year, while lower pension payments are received by residents who live farther from Riga and Pieriga. According to statistical calculations, the difference between the average pension payment in municipalities in Vidzeme, Kurzeme, Zemgale and Latgale regions (in 2019) and the pension payments received in Pieriga municipalities is statistically significant, at 95% confidence level. Similar trends were also observed in relation to life expectancy and the proportion of the population who are economically active – in municipalities where this indicator is higher, so are the average pension payments.

Conclusion

According to the results obtained during the study, a significant future problem will be not so much the population decline, but its consequences – labour shortage or lower availability of labour, which is already creating an impact on the Latvian economy, and will cause an even greater impact in the future.

As the population ages, the number of workers retiring will increase significantly each year and will at some point exceed the number of people entering the labour market.

This will have a negative impact on the overall growth of society, considering that growth is driven by increased employment and higher productivity. The ageing of the population will also change the structure and extent of public expenditure and revenue. With the share of the older population increasing, the current and future workforce can expect an increase in income and indirect taxes, such as value-added tax.

It can be predicted that around 2030, the ageing of the population will become one of the most serious problems in Pieriga, as well as in many other Latvian municipalities. Currently in 26% of all Latvia municipalities already more than 25% of the inhabitants are 65 or over and this number will continue to grow as the number of working-age people declines.

Average payment payments in municipalities are significantly influenced by trends in the movement of people, as there is a tendency that as the value of the migration balance increases, the average size of pensions also increases.

Kopsavilkums

Rakstā tiek analizētas Latvijas sabiedrības novecošanās tendences, kas, visticamāk, kļūs par vienu no vissvarīgākajām sociālajām pārmaiņām 21. gs. Eiropas Savienībā un Latvijā. Darba rezultātu pamatā ir Latvijas Centrālās statistikas pārvaldes (CSP) un Latvijas Valsts sociālās apdrošināšanas aģentūras (VSAA) dati. Iegūtie rezultāti liecina, ka ekonomiskās attīstības pieaugumu un nodarbinātības stabilizāciju Rīgā un Rīgas reģionā 21. gs. otrajā desmitgadē nodrošināja nevis paaudžu maiņa vai migrācija, bet gan to iedzīvotāju iekļaušana darba tirgū, kuri līdz tam nebija ekonomiski aktīvi. Viens no iegūtajam secinājumiem izsaka brīdinājumu, ka Pierīgā ap 2030. gadu iedzīvotāju novecošanās kļūs par vienu no vissvarīgākajām problēmām.

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GEOGRAFÍA LINGÜÍSTICA: A BRIEF INSIGHT INTO THE VARIETY OF THE SPANISH LANGUAGE ACROSS LATIN AMERICA

Geografía lingüística: ieskats spāņu valodas atšķirībās Latīņamerikā

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Abstract. While there are studies on differences between traditional Spanish and Latin American Spanish, they tend to either compare Castilian Spanish to one national variation in Latin America (e.g. Mexican Spanish) or assume that the whole region of Latin America is rather linguistically homogenous. This research aims to provide a brief insight into differences between variations of the Spanish language spoken in different countries in Latin America, comparing three local dialects: Mexican, Venezuelan and Chilean. Qualitative content analysis and the comparative method were applied to conduct the research. The findings suggest that there are differences in grammar usage and lexicon between different countries. While phenomena like anglicisms and changing prepositions were detected in all local dialects, Mexican Spanish stood out in terms of grammar, and Mexican and Venezuelan Spanish vocabulary showed specific local expressions.
Keywords: *Spanish, Latin America, dialect, geolinguistics*
DOI: 10.22364/fg.18.6

Introduction

While language geography, a branch of human geography, has been around for a while, most research into Spanish geolinguistics has had an emphasis on linguistic rather than geographical aspects (Yakubova et al. 2016; De la Mota et al. 2010; Llamazares et al. 2017). The presence of the Spanish language is an undeniable colonial legacy in hispanophone Central and South American countries. Brought to the continent in the 15th century, it has developed and changed in accordance with local culture, history and traditions, resulting in differences from traditional Spanish. However, territorial differences within certain languages is a common phenomenon in our world – persons originating from anglophone Caribbean states use expressions that are no longer used in modern Great Britain, and the Bulgarian diaspora (Bessarabian Bulgarians) in Taraclia, a city in southern Moldova, still speak 19th century Bulgarian – the same language their ancestors spoke when they migrated.

Generally speaking, existing studies on varieties of Spanish dialects can be categorised into two groups: the first group usually focuses on differences between traditional Spanish (Castilian) and Spanish in one particular country in Latin America. The second group, however, tends to assume that the whole region of Latin America is rather linguistically homogenous. The aim of this paper is to give a brief insight into

the differences in the Spanish language between three Latin American states – Chile, Mexico and Venezuela – and to show that there are notable differences in grammar and vocabulary usage across the whole region.

Theoretical background

Previous studies on the variety of Spanish dialects have mainly described three linguistic properties: phonetics, grammar and lexicon.

The most notable phonetic phenomena in Latin American Spanish might be *seseo, yeísmo* and *žeísmo* – these increase the number of homophone words. The term *seseo* is used to describe the pronunciation of the letter *z*, which is usually pronounced as *th [ð]* in European Spanish. This sound, however, does not exist in Latin American Spanish at all – the *z* is pronounced as *s [s]* (Bradley et al. 2004). For example, *rozado (worn) and rosado (pink)* are homophones in Latin American Spanish, and so confusion might arise – is the dress worn or pink? The term *yeísmo* describes the pronunciation of *ll*. While Spaniards, Bolivians and Paraguayans use the sound *[lj]*, most countries in hispanophone Central and Latin America use the sound *[j]* – similar to the Latvian *j*. This, however, does not apply to Argentina and Uruguay, – where the sound *[ʒ],* similar to the Latvian *ž* is used, which leads to another term – *žeísmo.* It is important to note that there are broad variations in phonetic specifics within regional dialects in Spanish – there are regions where speakers do not pronounce the letter *r* if it is the last letter of the word, Mexican Spanish speakers and older speakers of European Spanish tend to pronounce *x* as *[h]* instead of *[ks]* or *[s]*, aspiration of *s* is common in Guatemala, Peru and Colombian Andes (Hualde 2005), velarisation of *n* is common in Yucatan, Mexico; and Tucuman, Argentina, etc. … While phonetics might be the most obvious difference in verbal communication, analysis of written language is rather complicated.

The differences in grammatical constructions are less diverse than those in phonetics. There are differences in usage of grammatical tenses – it is argued that traditional Spanish speakers prefer the present perfect and Latin American Spanish speakers prefer the past simple (Gutin 2012). Latin American Spanish dialects tend to have different personal pronouns which also affects the conjugation of the verbs that follow. While the second person singular pronoun in traditional Spanish and most of Latin America is *tú,* this pronoun does not exist in Argentina and Uruguay, or in some parts of Chile, Guatemala and Bolivia (Figure 1). Instead, these regions use the pronoun *vos*, which does not exist in traditional Spanish, but is sometimes used as the informal short form of the second person plural pronoun *vosotros*. Hence, the verb following *vos* is conjugated in the second person plural. *You are* – traditional *tú eres* – in some Latin American dialects *vos sos* (Gutin 2012).

In Castilian Spanish, the second person plural pronoun is *vosotros,* and the second person singular formal pronoun is *usted* (the plural form is *ustedes,* after which the following verb is conjugated in the third person). Latin American Spanish, however, does not feature the pronoun *vosotros* at all – *ustedes* is used as the second

person plural pronoun and the plural for *usted* as well. In this case, even if *ustedes* is used as second person plural pronoun, the following verb is conjugated in the third person (Shaw et al. 2005).

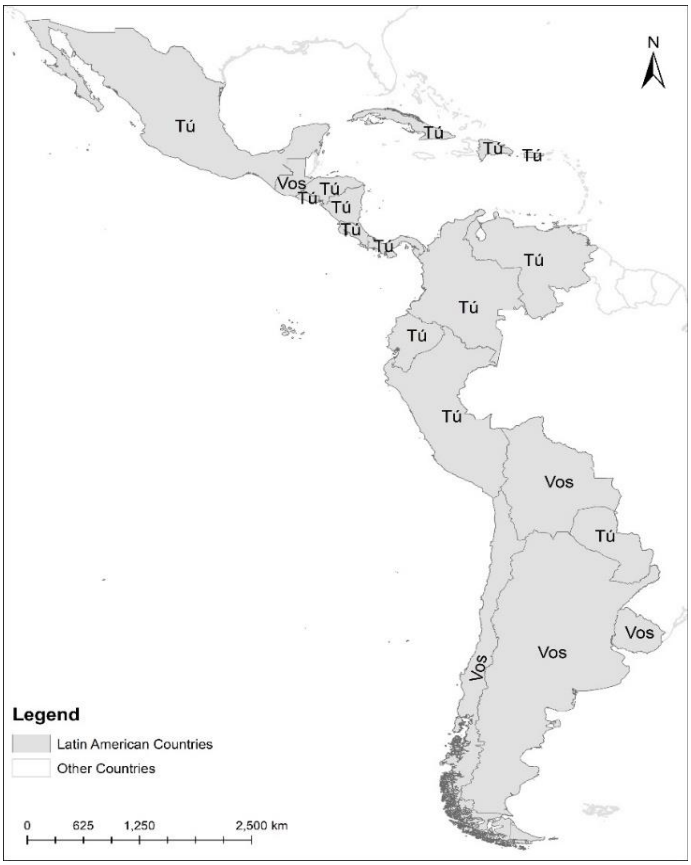

Figure 1. **Usage of second person singular pronoun across Latin America** (author's figure based on Gutin 2012 and ESRI spatial data)

Finally, the varieties of lexicon in Latin American Spanish suggest that regional differences are affected by local culture, ethnicities and traditions. There is a general notion that speakers of Latin American Spanish tend to use more anglicisms, compared to Castilian Spanish (Shaw et al. 2005). There are also many cases of homonyms across Latin America, for example – *cuadra*, which means "stable" in Spain and "neighbourhood" in Colombia; or, *guagua*, which means "infant" in the Andes and "bus" in Cuba. Mexican Spanish is heavily influenced by native Indian languages, such as Nahuatl and Mayan (Hualde 2005).

Methodology

This research took place in Germany. The research involved three participants, each representing a country in Latin America: Mexico, Chile and Venezuela. The participants share similar backgrounds, they are well-educated young adults and are from the upper socio-economic class. The participants were aware that they were

participating in a research project. The participants were asked to translate a text from German to Spanish (each participant's knowledge of German is C1 level, according to the Common European Framework of Reference for Languages). The original text describes a casual situation and does not contain specific terminology or complicated structures.

The translation was used to conduct qualitative content analysis. The comparative method was also used to carry out the analysis. The analysis had an emphasis on grammatical structures and lexicon; the grammatical structures used by the participants were compared to traditional Spanish and to structures used by other participants. Specific lexical usages were compared to both traditional Spanish and the vocabulary used by other participants. It is important to note that linguistic qualitative content analysis takes the general context into account, such as local cultural, political and historical influences.

Results

The findings suggest that there are differences in grammar and lexicon between the three Latin American Spanish speaking countries and Castilian Spanish (Table 1). While the three countries share some similarities, such as anglicisms and changing prepositions, local specifics can be distinguished.

Table 1. **Summary of the regional differences**

	Mexico	**Chile**	**Venezuela**
Grammar	Adding direct object pronouns; Skipping auxiliary verbs; *Dequeísmo;* Adding demonstrative pronouns; Changing prepositions; Diminutives; Sólo; Missing contraction *al*	Changing prepositions; Missing contraction *al*	Changing prepositions
Lexicon	Anglicisms; *Toparse;* *Bien feliz;* *Juntarse;* *Chingo;* *Ir a tomar*	Anglicisms; *Juntarse*	Anglicisms; *Epa;* *Chévere;* *Rumbear*

Table 1 shows that the most grammatical and vocabulary differences were found in the Mexican Spanish text. The author of the Mexican Spanish text added direct object pronouns, such as *lo*, when they were not a grammatical necessity and skipped the auxiliary verb *estar* several times. A common phenomenon in Latin American Spanish – *dequeísmo* – was detected. Subordinate clauses in Spanish can be

introduced by the complementizers *que* or *de que*. However, in verbal communication, *de que* is often used where *que* is more appropriate, which is considered incorrect and informal (Martinez-Sequeira 2002; Rabanales 2005). Additionally, demonstrative pronouns were often overused – the demonstrative pronoun *eso* was often followed by *lo*, which is not required. The Mexican Spanish text also showed a significant number of diminutives. One further point is that the word *sólo* was spelled with an *ó,* although in 2010, it was decided to that is should be spelled without an accent (Cinco Dias 2010). Some of the differences in vocabulary usage detected are known to be typical of Mexican Spanish speakers. While Castilian Spanish speakers use the verb *encontrarse* to describe an intended meeting, and *toparse* is used to describe an unintended meeting, in Mexican Spanish *toparse* carries the meaning of an intended meeting. Also, the phrase *bien feliz* shows another phenomenon of Mexican Spanish, where the word *muy* is often replaced by the word *bien. Chingo* and *ir a tomar* are phrases that are used only in Mexico. While the word *chingo* can be interpreted in many ways, it means *great* in this context.

In both the Mexican and the Chilean texts, the contraction al was missing. In Castilian Spanish, the phrase *contestar al teléfono* requires *al,* the contraction of the preposition *a* and the article *el.* However, in Latin America, it is common to simply use *el* instead of *al,* which is considered incorrect in Castilian. Additionally, Chilean and Mexican texts shared a common feature of vocabulary – *juntarse*, a reflexive verb that is widely used in Latin America to describe meeting someone. The citations below demonstrate how diverse the translations can be:

“"¡Hey!" dijo Marisol cuando se ha topado con Juan. "¿Cómo te lo va?" Juan estaba bien feliz de que el se la haya encontrado y el le dijo: "¡Hey, Marisol! A mi me va bien, gracias y ¿A ti? ¿Que haciendo? Hace poquito tiempo de que Marisol se compró un carro nuevo y estaba claro de que eso no lo pudo evitar, por eso ella le contó todo el rollo.” (Mexican translation)

“"¡Hola!" dijo Marisol al encontrarse con Juan. "¿Cómo te va?" Juan estaba muy alegre de encontrársela y dijo: "¡Hola, Marisol! Me va muy bien, gracias, ¿y a ti?¿Qué haces?" Marisol se había comprado recientemente un auto y eso no pudo evitarlo, por eso se lo contó a Juan.” (Chilean translation)

“„Epa!!!” Dijo Marisol cuando se encontró a Juan "Cómo estás?" Juan estaba muy feliz, porque se la había encontrado y dijo: "Hey Marisol! Chévere, gracias y a ti? Qué haces?". Marisol se había comprado un carro y no podía evitar no contárselo a Juan.” (Venezuelan translation)

In terms of grammar, the Venezuelan text was the closest to Castilian Spanish, however, there were differences in lexicon that are characteristic of Venezuela. Firstly, the greeting *epa* is used only in Venezuela, Bolivia and El Salvador. Secondly, the term *chévere,* meaning *great*, is used only in hispanophone countries located in the Caribbean basin. The same applies to *rumbear*, which is a verb used in the Venezuelan text to describe partying. The etymology of the noun *rumba* dates to 19th century Cuba, where the term was initially used as a synonym for a party. Considering the geographic location of Venezuela, its history and the fact that Venezuela shares major

cultural similarities with the hispanophone Caribbean islands (Mato 2003), the usage of *rumbear* is not surprising. It would, however, be a surprise to find this term in Chilean and Mexican texts, since rumba is not a part of their culture.

Additionally, cultural differences were detected when comparing the whole texts. The Chilean translation appeared to be the most formal, correct and accurate one. The Mexican and Venezuelan texts, however, carried a wholly different level of temperament in them, which can be literally felt when reading them. This is another evidence of the differences in mentality between different Latin American countries, since Chileans are known to be the most reserved and secretive Latin Americans.

Anglicisms, such as *jeans, carro (car), hey, auto,* etc. were widely used in all the analysed texts. The influence of the English language on Latin American Spanish is stronger than on Castilian Spanish (Shaw & Dennison 2005; Academia Chilena de la Lengua 2010), mainly due to geographic location and history. The phenomenon of changing prepositions was also found in all the texts. All the participants translated the phrase *tonight* as *en la tarde*, however, the correct phrase in Castilian Spanish would be *por la tarde*– all the participants replaced the preposition *por* with *en.* In the text translated by the Venezuelan participant, the verb *encontrarse* was followed by the preposition *a,* whereas Castilian Spanish requires the preposition *con.*

Conclusion

While there are studies on differences between traditional Spanish and Latin American Spanish, they tend to either compare Castilian Spanish to one national variation in Latin America (e.g. Mexican Spanish) or to assume that the whole region of Latin America is rather linguistically homogenous. This research successfully proved that there are geographical differences within the Spanish language, and that Latin American Spanish has local variations in different countries, and therefore, the region should not be considered linguistically homogenous.

The findings suggest that anglicisms and changing prepositions are typical of all three countries studied. Mexican Spanish differs from Castilian, Chilean and Venezuelan grammatically, featuring such phenomena as diminutives, *dequeísmo,* excessive usage of direct object pronouns and demonstrative pronouns, while Venezuelan and Chilean Spanish do not differ significantly in their grammar from traditional Spanish. Mexican Spanish and Venezuelan Spanish presents a unique vocabulary. While there are terms that are common only in Mexico, Venezuelan Spanish is heavily influenced by the Caribbean Spanish speaking countries and their cultures, therefore, some terms are shared with hispanophone Caribbean countries, such as Cuba.

Since there are a lack of studies in geolinguistics that focus on Spanish, it is advisable to conduct further research on this topic. This research was based on written language; therefore, phonetic aspects were not analysed. However, research on phonetic variations of Spanish across Latin America would contribute to the debate on how linguistically heterogenous the region is. It is important to note that the aim of

this paper is to provide a brief insight in national varieties of the Spanish language in Latin America. An in-depth analysis would reveal a more detailed picture. An empirical study with a large amount of data would allow quantitative content analysis to be conducted and statistically validated results to be presented.

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Kopsavilkums

Lai gan pastāv pētījumi, kas salīdzina tradicionālo spāņu valodu ar Latīņamerikas spāņu valodu, pārsvarā uzsvars tiek likts uz salīdzinājumu starp tradicionālo spāņu valodu un vienas Latīņamerikas valsts vietējo variāciju (piemēram, meksikāņu spāņu valodu), vai arī tiek pieņemts, ka Latīņamerika ir lingvistiski homogēns reģions. Šī pētījuma mērķis ir sniegt ieskatu Latīņamerikas valstu spāņu valodas nacionālajās variācijās, salīdzinot trīs vietējos dialektus: meksikāņu, venecuēliešu un čīliešu. Pētījums tika veikts izmantojot kvalitatīvo kontentanalīzi un salīdzinošo metodi. Rezultāti parāda, ka pastāv nacionālas atšķirības leksikas, vārdformu un sintaktisko konstrukciju lietojumā. Tādi fenomeni kā anglicismi un prievārdu mainīšana tika atklāti visos pētītajos dialektos, savukārt Meksikas spāņu valoda izcēlās gramatikas lietojumā. Meksikas un Venecuēlas piemērs norāda uz specifisku izteicienu lietojumu, kas ir raksturīgi tikai šīm valstīm.

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THE FILM INDUSTRY IN LATVIA AS A POTENTIAL RESOURCE FOR TOURISM DEVELOPMENT

Kino nozare Latvijā - tūrisma attīstības resurss

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Abstract. During a time of increasing competition in the tourism sector and growing demand for new tourism products, all stakeholders must more actively utilise non-traditional tourism resources. The film industry certainly counts as one of them. Although film-induced tourism has become quite popular round the world and maintains significant influence, these developments and research into this area have not gained enough attention in Latvia. The objective of this research is to examine the film industry as a tourism resource based on an analysis of the available public information on film production locations, related promotions for tourists in Latvia and the interest and experience of the general public in these types of tourist attractions. The results of the research prove the potential of the film industry, the existence of certain pieces of groundwork and at the same time the moderate interest of potential clients in engaging these resources and adding to Latvia's tourist turnover.

Keywords: *creative industries, film industry, film-induced tourism, tourism resource, tourism product*
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Introduction

With the development of the tourism industry both globally and in Latvia there is increasing demand for new tourism products, which are understood as "goods, paid or free services, wealth, values and conditions or their totality created by human activity, which contain actual consumption value and which are created and adapted for satisfying the needs of tourists" (MoE 2008 294). With change in demand and increase of competition in the tourism industry, new types of tourism resources are engaged in the creation of innovative tourism products, which are understood as "a totality of natural and man-made factors and processes possessed by a tourism place and which attracts tourist interest" (MoE 2008 294). The film industry has become one of these kinds of tourist resources and is one of the most significant creative industries globally. The film industry, which has been defined in Latvia as a field of culture encompassing the production of Latvian films, the distribution of Latvian and foreign films, and ensuring the preservation, protection, availability and promotion of Latvia's cinematographic heritage (Film Law 2010) is increasingly coming to the forefront in Latvia, particularly after the stagnation of the 1990s. The normative documents developed to shape the industry (The Film Law, The Strategy of the Film Industry 2014–2020 et.al.) testify to this fact, as do the creation of an institutional structure responsible for the film industry, and state and municipal support for film production, including the production of foreign films. For instance, co-financing by the National

Film Centre and Riga Film Fund provides for engaging six to seven foreign films annually. The National Film Centre provides 20% of the total eligible costs in co-financing (if without an identifying reference to Latvia; 25% if a reference is included), Riga Film Fund provides 20% in co-financing if the shooting takes place in Latvia and 25% if it takes place in the administrative territory of Riga. The objectives of co-financing include the attraction of foreign film industry financing, the promotion of Latvian cultural exports and the promotion of Latvia's overall image internationally, the promotion of Latvia's creative industries, and the promotion of cultural tourism (National Film Centre of Latvia 2019).

Film-induced tourism is the most commonly used term in this context. According to Beeton (as cited in Hamn and Wang 2011) film-induced tourism refers to visits to sites where films and TV programmes have been filmed, as well as tours of production studios, including film-related theme parks. In this way, film-induced tourism has become a sub-form of cultural tourism, while a film production itself contributes to the use of infrastructure, including tourism infrastructure. It can become a marketing tool for the promotion and recognisability of a tourism destination (Beeton 2006; Juškelyte 2016; Hahm and Wang 2011) and simultaneously serves as a resource for the creation of new tourism products at a destination. Although still considered a new type of tourism (Cardoso et al. 2017), popular films can increase the flow of tourism to the filming location (either the actual filming location or a location where the storyline of the film took place) by 25% to 300% (Champion Traveler 2019). For instance, according to the data collected by Manson and Eskilsson, a year after the release of *Braveheart*, the number of visitors to the Wallace Monument (Scotland) had grown by 300%, while within a few years of the release of the TV series *Wallander* turnover in the tourism sector of Ystad (Sweden) had gone from EUR 56 million to approximately 83 million and the number of full-time employees had increased from 338 to 560; furthermore, the TV series *Heartbeat* increased the number of visits ton Goathland, Yorkshire (England) by 7.5 times, creating new jobs in the local tourism sector, new hotels and product sales, and extending the tourism season (Nizol 2016). These facts lead to the conclusion that the development of the film industry and the improvement of international recognisability can be utilised more to increase visitor numbers at tourist attractions and to boost revenue in Latvia.

Cultural tourism and the creative industries enjoy a significant place in the tourism industry. Cultural tourism and the creative industries have been defined as ones of the four strategic types of tourism for Latvia and support programmes for the attraction of creative industries were established (MoE 2014). Proposals for the support of developing cultural tourism products, particularly targeted at internationally popular areas which are in line with the specific interests of Latvia, have been suggested for the new planning period (MoE 2019). EU experts have pointed to the increased development of synergies between creative industries and tourism and the good coordination and cooperation of the institutions involved as positive factors in

Latvia (PROMAN Consortium 2016). However, compared to other countries, the potential of the film industry and its implementation in Latvia has not been utilised enough. The lack of significant research into the area testifies to this fact. This, in combination with the abovementioned factors, proves the topicality of the theme.

This research puts forward two subjects of research: 1) research into information available on the Internet on film production locations in Latvia and related promotions for tourists; 2) research into the experiences of residents of Latvia and their interest in visiting tourism destinations and sites related to film productions. Answers to questions on these subjects may assist professionals in deciding on the creation of new tourism attractions and travel routes.

Data and methods

The empirical part of the work applies the paradigm of pragmatism by using both qualitative and quantitative research methods. By employing the method of document analysis, the authors collected and summarised information available on the Internet on various (Latvian, co-produced and foreign) film production/shooting locations in Latvia as well as the related existing tourism promotions. This information was acquired by using Google search and entering various theme-compliant keywords, thus gaining access to various sites containg relevant data. A questionnaire survey was used, employing the principle of random selection to learn the opinions of Latvian residents. The questionnaire was posted on webanketa.com, on social networks and was also communicated at a personal level by employing the "snowball' method. The activities resulted in 160 completed questionnaires, which, despite not providing sufficiently high credibility, characterise the situation to a certain extent. The questionnaire contained 15 questions, including four open questions on visiting filming locations.

The research was conducted in October 2019.

Results

The research of information available on the Internet on various filming locations in Latvia resulted in the collecting and summarising of information on 106 films shot in Latvia (feature films, TV series and documentaries) and the conclusion that the majority of such places are located in Kurzeme (43%) or Vidzeme (36%) regions, while the smallest number of filming projects (or information about them) have been implemented in Zemgale (5%) and Latgale (3%) regions. Three of these films were shot before 1940, 56 during the so-called Soviet period (1941–1990) and 46 from 1991 onwards, thus reflecting the latest two historical periods quite similarly in terms of numbers.

Several tourism promotions were identified based on collecting and summarising information available on the Internet on tourism promotions related to filming locations and events. The cinema town Cinevilla represents the most vivid example of a film-induced tourism attraction implementing film production/shooting

projects and serving as an interesting site for tourists and a tourism promotion developed over the last few years (Tukuma TIC 2019; Cinevilla Studios 2019). There are other positive examples as well. The project "Cēsis – Kino identitāte", which can be found at the directory of cultural environment trails in Latvia on the website letonika.lv, includes TAKA, a film map featuring 75 sightseeing places related to the shooting locations of popular films in Cēsis region (Letonika 2019). The website parkulturu.lv offers a map with the locations of Latvian films shot in Ķekava region, including *Zvejnieka dēls* (A Fisherman's Son 1940; 1957), Bermontiāda (War Against Bermont 2009), *Mājup ar uzvaru* (Home with a Victory 1947), *Salna pavasarī* (Late Frost 1955), (Parkulturu 2019). The guesthouse Ezermaļi offers visitors a chance to enter into the world of *Ezera sonāte* (1976) (A Lake Sonata 1976) (Ezermaļi 2019). The farmstead Ielīcas, just off the Valka-Smiltene highway, is a cultural-historical monument and is being promoted to tourists as a shooting location for the Latvian film *Pūt, vējiņi* (Blow Wind 1973) (Ziemeļlatvija 2019). Kuldīga also promotes film production/shooting locations in the surrounding region (*Kuldīga: History. Events. People database (2019)),* while Madona tourist information centre organises trips to sites which, inter alia, include two places designated as tourism destinations – Kalna Jaunzemji and Dobuļi – as shooting locations for the Latvian TV series *Likteņa līdumnieki* (The Clearers of Fate 2008) (Madona TIC 2019). It has been reported in the media that Riga Film Museum has created a map of trails connected to Riga films, providing the opportunity to take a trip around Riga as a city of cinema and to trace the shooting locations of around 40 films, produced both during the Soviet period and recently (LSM 2014). However, it cannot be found on its website. The acquired results show that there exists a corresponding tourism promotion, including shooting locations of films from various periods, which can accordingly attract various target audiences of different age groups or could create a necessity for additional explanations. Overall, tourism utilises only a small part of the potential contained in the film industry. Besides the aforementioned sites, which are most attractive to Latvian residents, there are also several positive examples in the context of foreign films. For instance, the city of Liepāja has used its Internet resources for the promotion of filming activities in Liepāja and its surroundings in 2017 for the plot of a French TV weekend show, *Echappées Belles*, shot at Karosta (former military port), as well as a Japanese TV show, *ITteQ: Let's Challenge the World*, which has an average number of viewers of around 20 million and was shot at the same location (Liepājniekiem 2019). Places like these could be potentially interesting and utilised more actively for tourists of these respective countries during their visits to Latvia.

A survey of Latvian residents was carried out to gain insight into the extent to which activities related to filming could be used as a resource for attracting tourists to Latvia, as well as the etent to which sites related to filming are motivations for travelling. In total, 63% out of 160 people surveyed were women, and 37% were men, while the respondents were divided by age structure as follows: 22% were aged 18 to

30, 61% were aged 31 to 45 and 17% were 46 or older. The frequency of travel indicated by the respondents was at least one trip per year. The statement that films did not have any effect on the motivation of travellers to visit a tourism destination was strongly disagreed with by 23%, disagreed with by 63%, agreed with by 16% and strongly agreed with by 0% of respondents. This, as well as many international examples, testify to the fact that tourist attractions like these have the potential to assert themselves as an important factor in selecting a destination. At the same time, 67% of respondents provided a negative answer to the question as to whether they had travelled to a destination they had seen in a film, which could indicate either lack of interest or the absence of suitable promotions. Respondents were asked an open question: where they would choose if they could travel to any location outside Latvia they had seen in a film. The most popular destinations were New Zealand (17%) – on some occasions specific films such as *Lord of the Rings* and *The Children of Captain Grant* were also indicated as having inspired the choice and provided motivation for travelling – and the USA (13%), with such destinations as Las Vegas, Hollywood film studios and New York being specified. Croatia was always named as a destination thanks to the series *Game of Thrones*, while Scotland on several occasions was associated with *Braveheart*, and Turkey was singled out thanks to the TV series *Magnificent Century*. Other countries named by respondents included Australia, France, Russia, England, Thailand, China, Canada, Ireland and Greece, as well as Antarctica.

To acquire more substantial replies regarding the factors motivating travellers to choose one or another travel destination based on their impressions from films, a question was asked about the most significant reasons for visiting a particular destination.

Table 1. **The motivating factors of travellers for visiting filming locations** (authors' figure)

	The most important reason	Medium important reason	Minor reason	Quite an unimportant	Not an important at all
Landscape	65.63%	6.25%	9.38%	3.13%	15.63%
Actors	15.63%	6.25%	39.06%	9.38%	29.69%
Story	23.44%	31.25%	17.19%	7.81%	20.31%
Destination marketing campaigns	14.06%	10.94%	23.44%	26.56%	25%
Special movie tours	12.5%	12.5%	15.63%	23.44%	35.94%

Assessing the replies summarised in Table 1, one can conclude that landscapes (nature sites, cityscapes, et.al.) represent the most significant reason for visiting a location seen in a film. The overall storyline (i.e. the motivation for travel is due to an emotional bond with a storyline of a film, while visual landmarks are not that significant) was the next most significant factor. Other important factors include the

cast of actors of a film (respondents find it important to identify with a place that popular personalities are associated with. Marketing campaigns for specific destinations have also been mentioned as a significant motivator, allowing places to identify themselves with the film in question, while film tours dedicated to a specific film and delivered in the form of organised trips to all the filming locations of a film were referred to as the least significant. Besides, one of the respondents pointed out that a location seen in a film would not be the main destination, but rather one among a number of other destinations during a trip. The importance of the factors named by the respondents should be taken into account for promoting the development of film-induced tourism, and creators of tourism attractions and travel organisers should also bear them in mind.

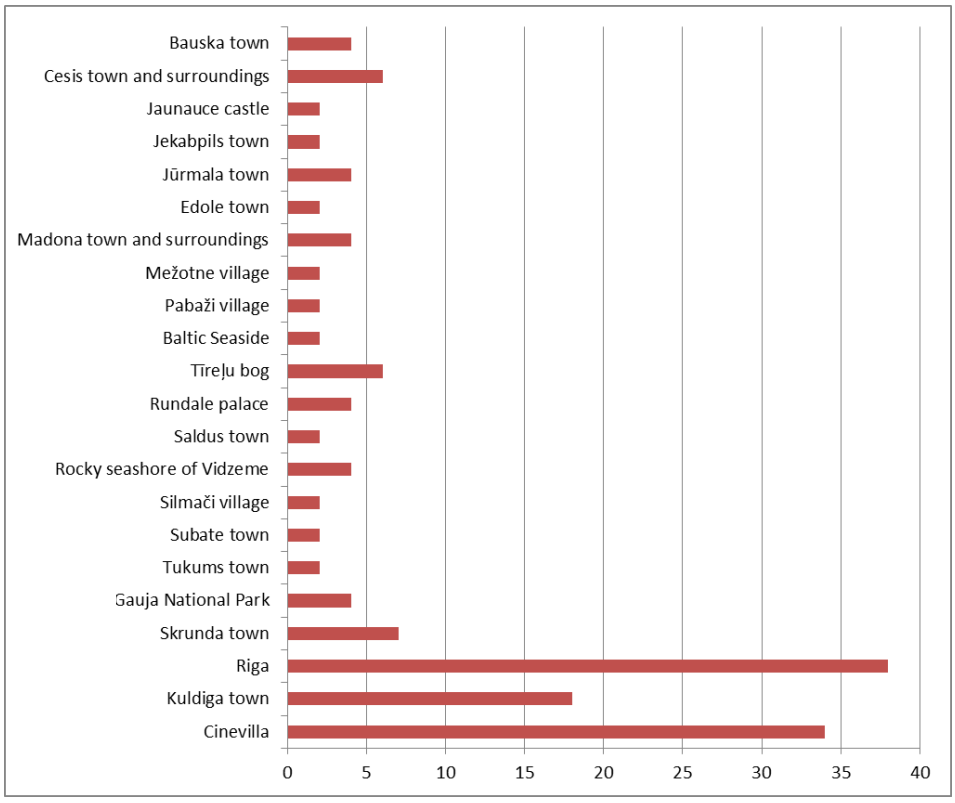

Figure 1. **The filming locations in Latvia indicated by the respondents** (authors' figure)

The next part of the questions dealt with films shot in Latvia. Answers to an open question as to what filming locations in Latvia were known to the respondents are summarised in Figure 1. It can be seen that Riga was named most often (38 reponses) while as filming locations Cinevilla received 34 responses, and the town of Kuldīga 18 responses, mostly citing the film "Emila nedarbi" (Naughty Emil 1985). Only seven respondents indicated that they did not know any filming locations in Latvia. In total, 58 filming locations were mentioned, with most of them only being mentioned once. It is interesting to compare these responses with replies to the

question regarding which destinations the respondents have visited as filming locations and locations seen in Latvian films.

Table 2. **Filming locations in Latvia visited by the respondents**

Places visited	Number of answers
Riga (incl. specified sites such as the Old Town, Ķengarags, etc.)	12
Cinevilla	9
Kuldīga	7
Cēsis and surroundings	7
Edole town	3
Tukums town, Zlekas village, stony seashore of Vidzeme, Jaunpils town	2
Jēkabpils town, Saulkrasti town, Carnikava village, Turaida town, Aglona town, Liepāja town, Dundaga town	1

It should be mentioned that only 41 answers were received to this open question, and 16 destinations (which have been grouped into larger territorial units) were mentioned by respondents. The results of the survey reflected in Table 2 lead to the conclusion that only a small number of filming locations have been visited as filming locations and there is space for development for using the film industry as tourism resource in future.

Conclusion

Summarising the results of this research, one can conclude that there are many examples globally of successful use of the film industry in the development of tourism destinations, thus increasing the desire of viewers to travel to places where films have been produced/filmed or that are featured in the cinematography and therefore providing a significant contribution to tourism and the economy in general. Latvia also has good preconditions for the use of the film industry in tourism, particularly taking into account the Soviet heritage in this area and the achievements of the past few decades. Overall, Latvia lacks targeted tourism promotions related to the film industry, the public information available is fragmented, and only a few locations have been developed as specific products for cultural tourism. However, there are several successful film-related tourism promotions. As reflected in the survey of Latvian residents, there is moderate interest and insufficient knowledge regarding the opportunities and benefits of visiting such sites, thus testifying to the insufficient use of their potential. The results of this research reflect the existence of promotions and the availability of information on the Internet. However, more detailed research would be required to assess the quality and the intensity of the use of the respective sites as tourist attractions. Municipalities and businesses can make use of the results of this research to carry out a critical assessment of the information available about filming locations in Latvia and the opportunities to create a tourism product that would correspond to this theme in terms of its design and contents and place it on tourist-

oriented websites, together with objective and attractive information on filming locations that relate to a particular story. Municipalities and businesses could also consider how to make use of foreign films with internationally acclaimed actors in order to promote Latvia or a specific location, and as a result, attract foreign tourists.

Kopsavilkums

Laikā, kad tūrismā arvien palielinās konkurence un pieprasījums pēc jauniem tūrisma produktiem, nozarē iesaistītajām pusēm arvien aktīvāk jāizmanto netradicionāli tūrisma resursi, par kādu var uzskatīt arī filmu nozari. Lai gan daudzviet pasaulē filmu izraisīts tūrisms ir kļuvis gana populārs un tā ietekme ir ievērojama, Latvijā šīs jomas attīstībai un pētījumiem nav pievērsta pietiekama uzmanība. Šī pētījuma mērķis ir apzināt filmu nozari kā tūrisma resursu Latvijā, izvērtējot pieejamo informāciju interneta vidē, uz filmu uzņemšanas vietu un notikumu bāzes izveidotos tūrisma produktus kā piemērus šī resursa izmantošanai, kā arī izzināt Latvijas iedzīvotāju pieredzi un ieinteresētību šāda piedāvājuma izmantošanā. Pētījuma rezultāti parāda filmu nozares potenciālu, jo pastāv filmu un tūrisma nozares pozitīvas stratēģiskās nostādnes, ir vairāki labi piemēri un vienlaicīgi mērena potenciālo klientu ieinteresētība šo resursu iesaistei tūrisma apritē Latvijā.

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SITES RELATED TO DEATH AND DISASTER IN CULTURAL AND TOURISM GEOGRAPHY – A THEORETICAL PERSPECTIVE

Nāves un traģēdiju vietas kultūras ģeogrāfijā

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Abstract. Research into tourism, a relatively new discipline, is developing, using theories and approaches from other disciplines. Extensive research is underway in Latvia on sites related to tragic historical events and death, including the use of Holocaust sites in tourism. In order to comprehensively study these dark heritage sites, previous studies related to cemeteries and death sites have been analysed. The aim of this article is to identify death sites as special places and as elements of the cultural landscape. The attitude of locals towards dark heritage sites cannot be understood without understanding the attitude towards death sites and cemeteries in the cultural context. This article gives an overview of existing research in necrography, summarising the geographical approaches used to characterise these particular sites. The studies already conducted in Latvia have been reviewed and the most relevant definitions of dark tourism and thanatourism have been identified. The main problems faced in including places of death and tragedy in tourism product promotions have been described, especially if they are related to tragic events such as the Holocaust. In conclusion, the main aspects and approaches to be used for further research into the use of Holocaust sites in tourism have been identified.

Keywords: *cemeteries, dark heritage sites, dark tourism, Holocaust sites, sites associated with death*
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Introduction

In the last decades cemeteries, burial sites and death/genocide sites have become an integral part of tourism supply and demand. Cemeteries, which reflect local culture, politics and historical events, have become tourist attractions, as have other sites related to death and tragic historical events. It should be noted that local communities are not always willing to expose these cemeteries or to "open" dark heritage sites to tourists. This depends on both local culture and collective memory and locals' desire to be either "silent" or "vocal" regarding tragic historical events and their aftermath. One of the central issues in this discussion is, on the one hand, interest from tourists and, on the other hand, the attitudes of locals towards the inclusion of these sites in tourism product promotions and the ethical aspects of consumption. As a result of the complexity of 20th-century historical events, there are many places in Latvia associated with tragic events and death. A number of them have become visitor "attractions", though many sites are still "hidden". Some sites of death associated with

important events in Latvian history are more or less known and marked: the sites where participants in the 1905 revolution were punished, as well as the resting places of revolutionaries, the death sites of World War II partisans, and sites where killings of local people took place. However, World War II also left many death sites on the territory of Latvia that have remained hidden for a long time, including about 265 Holocaust memorial sites, and the question of their acknowledgement and exposure still arouses debate. The debate and disagreement are due to the complex nature of these places – "Sites with a controversial history, including locations of war, atrocity, and horror'… or 'places with shadowed history" (Hartmann 2014, 166), "places of pain and shame" (Logan & Reeves 2009), and due to different parties involved in these events – the victims, the perpetrators and the observers/bystanders (Tunbridge & Ashworth 1996). These are places related to the Holocaust – ghetto areas, concentration and death camps, mass murder sites and mass grave sites – and also places where Jews were hidden or rescued. How are these places highlighted in the landscape and in memories, and what feelings do they evoke? How do you better label them as dark tourism destinations? Light (2017) outlines the political and ideological context of tourism at places of death and suffering as a direction for future research.

Although over the last 20 years researchers worldwide have been actively engaged in research into difficult heritage and dark tourism, such research has only just begun in Latvia. The purpose of this article is to analyse sites of death in cultural geography studies and dark heritage sites in tourism geography in order to define and apply the most appropriate geographic approaches to research on dark tourism sites, including Holocaust sites.

Place, space, and cemeteries and other death-related sites

Place and space are central concepts in human geography. People develop a sense of place by attaching meaning and emotion to locations, associating them with noteworthy events and labelling them. (Williams & Lew 2015). Place and space in their holistic meaning and entirety is defined as "landscape" (Melluma 2012). Cultural geography explores human imprints and visible imprints in the landscape. Cultural landscapes are divided into different types such as: ethnic, folk/local, popular, and elite landscapes (Lornell & Mealor 1983). Cultural geography focuses on material culture and landscape, while social geography and folk geography also explores intangible cultural elements such as rituals and traditions (Lornell & Mealor 1983; Merridale 2003; Stevenson, Kenten & Maddrell 2016). Thus, burial sites and cemeteries are also a characteristic element and expression of folk and local culture.

Human history shows that people have always created places to remember the dead (Lee 2015). Francaviglia characterises cemeteries as thoughtfully created and highly organised cultural landscapes which are miniature representations of the real world and exhibit the characteristics of populated areas (Francaviglia 1971). Merridale states that "cemeteries reflect the beliefs, tastes, interests, and even social organisation of the people who created them" (Merridale, 2003 176). Johnson defines a cemetery as

a place that "manifests and intensifies a variety of rural and urban spaces and, paradoxically, generates a model milieu for the living" (Johnson, 2008 777). That echoes Francafiblia's notion that "Cemeteries, as the visual and spatial expression of death, may tell us a great deal about the living people who created them" (Francaviglia 1971, 509).

Sites associated with death are special places, containing specific information and memories. They are considered both as holy places and as places of special atmosphere and power. They are associated with the spirits and presences of the dead; they may be places to communicate with the dead; they create particular feelings (grief, mourning, anger, shock); they can be a place to reflect on the relationship between people and places, and the interactions between them (Clark 2014; Lee 2015).

The French philosopher Foucault's designation for cemeteries – "heterotopic space" (Foucault 1967) – is widely used. This refers to somewhere which is both a real place and a space, but at the same time distinct from everyday space. It is a place and a landscape with a spiritual and mystical atmosphere. Sites that are associated with death, mortality and burials have also been described as the "last landscape" (Worpole 2003); "other" or "alternative space" (Young and Light 2016); emotional landscapes (Maddrell 2016); and places of pilgrimage.

In Europe, sites associated with death have attracted interest over the past two centuries, although they were a marginal topic of research as in many cultures death and death issues have been "taboo". In contemporary society there is a growing interest in death and the bodies of the dead. These topics are more highlighted in popular culture, in museums and exhibitions, in the media, and by the tourism industry and celebrities (Young and Light 2016). Geographers have focused on cemeteries since the 1960s (Pitte 2004). Necrography has developed as the science of spatial and cultural dimensions in burial landscapes, or "the study of deathscapes" (Muzaini 2017). Academics specialising in ethnography, architecture, sociology, genealogy, psychology, economics and politics also study death, rituals, graves, and cemeteries associated with death (Worpole 2003). In his study, Paraskevas (2006) analyses grave inscriptions and epitaphs, describing how they represent the position of dead people in their societies and how this demonstrates social identity. Ancient cemeteries reflect the political, cultural and social history of the country where they are located and reflect public values and attitudes towards death. Today, these places are viewed in the context of socio-cultural, economic, and political questions (Young and Light 2016).

Previous research has described grave formation and morphology in Western culture, and their relation to economic development, hygiene and sanitary norms and social values. While in the Middle Ages burials were carried out in or near churches, during the period of the Industrial Revolution cemeteries were located outside the city. As cities expanded, some cemeteries were located again in city boundaries. Initially, cemeteries were strictly marked area with a wall, a fence and a gate, but later on they became city parks, recreational areas or areas for walking without any special

enclosures. In the late 19th century, so-called national cemeteries were built in Europe, which were places where prominent people were laid to rest. World War I cemeteries were created in a different way: as simple, similarly designed rows of symmetrical graves. The transition from garden cemeteries to lawn cemeteries took place in the 19th–20th century. The discussions about the use of abandoned and closed cemeteries as leisure and recreational sites emerged at that time (Lee 2015; Young and Light 2016). Lawn cemeteries dominated during the 20th century, and with increasing cremations, so-called gardens of rest as classless sites emerged (Rugg 2006). Globalisation also affects cemeteries and crematoria, as ash dispersals outside the cemetery are increasing in number (Pitte 2004). Cemeteries manifest the consequences of immigration – they are becoming culturally and religiously diverse and are a meeting place for different cultures (Swensen and Skår 2018).

Sites associated with death are an endless field of research, as they reveal new and nuanced perspectives on death, killing, mourning and memory (Stevenson, Kenton and Maddrell 2016). Cultural geographers offer a prism through which to look at traumatic sites. Geographers study cemeteries as total landscapes, analysing their spatial features and how the spatial arrangement of elements changes over time. The meaning of a landscape varies depending on who is looking at it. Places of death and remembrance and landscapes also reflect issues of power in society. Thus, memorials and remembrance sites are not only things of the past but also a part of the present (Leib and Webster 2015). G. Barrett and T. Barret (2001) have also described cemeteries as storehouses of natural and cultural capital in the world, as sites of high biodiversity value, with rare, valuable tree species that deserve increased attention and protection. In contemporary Western society, the context in which we look at places of death is changing, along with changes in society, culture, economy, politics and environment. Cemeteries and places of death serve as multifunctional, easily accessible, amenity space with secondary functions – recreation, walks, reading, contemplation, including dog-walking, jogging, cycling, more like a park (Lee 2015; Swensen and Skår 2018). Tourists are attracted to cemeteries, battle sites, genocide and Holocaust sites, sites of individual and mass murder, celebrity death sites, corpses, conflict zones and dangerous sites, and torture museums. There is also a growing variety of commemorative rituals, traditions and events held at these locations (Young and Light 2016). According to the typology of tourist sites, sites associated with death can be defined as sites of special interest and heritage sites (Williams and Lew 2015).

Landscape in geography is not only a process, a feeling, a resource for development and a part of heritage, but also a problem (Melluma 2012). It all depends on how we look at these places and how we treat them. If we continue to treat them as "morbid" (Young and Light 2016), keeping them at a distance, we will ignore the places that really matter in life. As Lee states (2015, 109) "The creation of a new place or a new relationship to place is the creation of a new identity, which is formed out of the place it has helped change". These places are still highly ambiguous, acceptable to

some people but not to others – out of the ordinary or alternative places (Young and Light 2016).

Darkest sites of dark tourism

In tourism visiting sites related to death and disaster is called "dark tourism" or "thanatourism". Both concepts of dark tourism and thanotourism are still used in parallel. Dark tourism is defined as "the presentation and consumption (by visitors) of real or commodified death and disaster sites" (Foley and Lennon 1999, 198). Seaton (1996) in his publication on thanotourism defines it as "heritage staged around attractions and sites associated with death, acts of violence, scenes of disaster, and crimes against humanity". Some scholars have used also alternative definitions: for example, "sites associated with death and suffering" (Isaac and Cakmak 2014); "dark heritage" (Thomas, Seitsonen and Herva 2016), "difficult heritage" (Logan and Reeves 2009), "sensitive heritage" (Magee and Gilmore 2015) and "trauma tourism" (Clark 2009). The difficulty and complexity of the topic, as well as its interdisciplinary nature, is best characterised by Stone (2013, 308): "Dark tourism also symbolises sites of dissonant heritage, sites of selective silences, sites rendered political and ideological, sites powerfully intertwined with interpretation and meaning, and sites of the imaginary and the imagined".

Research into the field of dark tourism is mainly focused on the supply side of dark tourism, including site authenticity, commodification (Cole 2000; Foley and Lennon 1997; Lennon and Foley 1999; Wang 1999; Wight and Lennon 2007) and site typology (Miles 2002; Sharpley 2005; Stone 2006). In the mid-2000s the focus of research into dark tourism shifted to the demand side of dark tourism, exploring visitors' motivations, experiences and behaviours (Asworth 2008; Ashworth and Hartman 2005; Biran and Poria 2011; Cohen 2011; Zhang et al. 2016) and emotional dimensions (Ashworth and Isaac 2015; Buda 2015; Buda et al. 2014; Nawijn et al. 2016), as well as the political dimensions of dark tourism's relationship with collective memory and national identity (Best 2007; Stone 2012).

Dark tourism represents "a multi-disciplinary academic lens through which to scrutinise a broad range of social, cultural, geographical, anthropological, political, managerial and historical concerns" (Stone 2013, 309).

Research into Holocaust-related sites has made up a significant proportion of the total research carried out into dark tourism. According to Stone (2006), these sites are the "darkest" sites in the whole spectrum of dark tourism. The "darkest" sites are characterised by being oriented to education, conservation and commemoration; in addition, there is higher political influence attached to them. Holocaust tourism can be experienced at an actual Holocaust site or elsewhere (Miles 2002), although discussions about the geographical location of memorial sites are still ongoing (Clark 2014). Holocaust sites in Europe began to be identified and commemorated in the early 1960s, but Holocaust tourism research started gaining momentum after the

collapse of the USSR and the "Iron Curtain", resulting in an increase in pilgrimages of memory by the members of the Jewish community to Eastern Europe (Stier 1995).

Research in Latvia

A steady tradition of regularly visiting and caring for graves has been going on for centuries in the territory of Latvia. Already in the 16th and 17th centuries, farmers were buried in burial mounds. Cemeteries and burial ceremonies are an important part of Latvia`s heritage – places where the cultural memory of the people is rooted and ongoing. Traditionally, rural cemeteries were set up near farmsteads, on hillsides ("sand hills"), at the edge of woods, near beautiful trees and in the driest, most beautiful places (Uzule and Zelche 2014). The Latvian repository of folklore (Cabinet of Folksongs) holds many folk songs related to cemeteries and burials (Tautas dainas, S.a.). Cemeteries and cemetery culture is one of 99 treasures included in the Latvian Culture Canon (LKK, S.a.).

Cemeteries in Latvia have been studied by archaeologists, philologists, architects, biologists and sociologists. Research on the formation of rural cemeteries has been conducted only in the form of compilation of historical and statistical data. The most significant research works in this field are Uzule and Zelče's monograph on cemetery festivals (Uzule and Zelče 2014) and a chapter, "Sacred places of the Region: Church and Cemetery Landscapes", in a book of sacral landscapes of Butnieku municipality (Zarina, Lukins, Voloshin and Salicka 2013, 85). It explores the spatial structure of cemeteries, the process of their formation, and their interactions with surrounding areas and their inhabitants. Sacred landscapes and their elements have been identified: church, church towers, cemeteries, monuments and crosses. Latvia also reflects the worldwide practice that the size of monuments are testament to the merits of deceased people, their wealth and that of their family.

The building of the State Security Committee in Latvia is also considered to be a place of death. Its use for the development of a creative dark tourism product has been studied by researchers from Vidzeme University College (Grinfelde and Veliverronene 2018). Their study analyses visitors' comments on TripAdvisor, the on-site experience and the emotions the site evokes.

Certain dark tourism sites related to the Holocaust or the dark heritage of the Soviet period in the Baltic States have been included in international research on dark tourism. However, it should be stated that the topic has still not been researched enough (Wight and Lennon, 2007; Wight 2016) as a focus on this area in Eastern Europe and the Baltic States could be realised only after the collapse of USSR.

Light (2017) indicated that the field of dark tourism research still needs deeper research to be carried out into ethical issues related to the presentation and consumption of dark heritage places, dark tourism in a political and ideological context, the role of tourism and the nature of disagreement between different groups, as well as the experience of visitors at a wider range of sites and the social context of their visits.

Conclusion

As the literature review shows, graves, cemeteries, and sites associated with death are topical areas for research. In the context of future research, the following aspects should be focused on when analysing dark heritage sites in Latvia (including Holocaust-related death sites) and their use in tourism: geographical location and environment; types of land use; information about the sites; virtual and physical accessibility; how sites are marked and identified as places of death and tragic events; how these places are perceived by the locals; how different tourist groups perceive and experience these places; how these places can be better marked, highlighted and arranged in a sustainable context; how these sites can be planned, managed and directed; and what the host-guest relationships at these sites are.

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Kopsavilkums

Tūrismā kā visai jaunā zinātņu disciplīnā pētījumi attīstās, izmantojot citu zinātņu nozaru teorijas, atziņas un pieeju. Latvijā ir sākts plašs pētījums par holokausta un ar to saistīto vietu izmantošanu tūrismā. Lai vispusīgi analizētu šīs drūmās vietas kā nāves vietas, šajā rakstā ir apkopoti līdzšinējie pētījumi, kas saistīti ar kapu vietām, kapsētām un traģiskām nāves vietām. Raksta mērķis ir identificēt nāves vietas kā īpašas vietas un ainavas, tostarp apzināt tās kā kultūras ainavas elementus. Vietējo iedzīvotāju attieksmi pret sarežģītās pagātnes vietām, kas saistītas ar sarežģītu pagātnes mantojumu, nav iespējams izprast, nenovērtējot attieksmi pret nāves vietām un kapsētām kultūras kontekstā. Rakstā ir analizēti līdzšinējie pētījumi nekroģeogrāfijā un apkopotas atziņas par ģeogrāfisko pieeju, kas izmantota šādu vietu analīzē. Ir raksturota saikne starp vietu kultūras ģeogrāfijā un tūrisma ģeogrāfijā, apzināti Latvijā veiktie pētījumi, identificētas visatbilstošākās drūmā tūrisma definīcijas, kā arī ir raksturotas galvenās problēmas, kas rodas, iesaistot tūrisma piedāvājumā nāves un traģēdiju vietas, it sevišķi, ja tās ir saistītas ar tādiem traģiskiem notikumiem kā holokausts. Noslēgumā ir identificēti galvenie aspekti un pieejas, kas jāizmanto, turpinot pētījumu par holokausta vietu izmantošanu tūrismā.

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DEVELOPMENT OF LATVIAN PEAT INDUSTRY OVER LAST 100 YEARS

Latvijas kūdras industrijas attīstība Latvijā pēdējo 100 gadu laikā

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Abstract. Various economic, political and social developments influenced the development of the peat extraction industry in Latvia during the 20th century. In comparison with some other European countries, where peat had been used for the needs of the energy sector for several centuries, the development of peat industry in Latvia was somewhat different. The aim of this study was to find out the nature of the development of the peat industry based on an analysis of historical information and a comparison of advantages over other European countries. In order to understand the changes and factors influencing the development of the peat industry in Latvia, it was necessary to identify and evaluate peat extraction volumes, changes in peat use purposes and technologies, as well as factors influencing the industry's development. A comparison of historical data on peat industry development in Latvia and in other European countries reveals a number of differences. Latvia was the first country in Europe to restructure peat extraction from using peat for energy to extracting and processing it for horticultural needs. Large amounts of peat were used for combustion in Latvia only for a relatively short time: between 1960 and 1990. Peat extraction decreased significantly in 1992 – a time when export markets were beginning to develop. Since 2003, more than 90% of extracted peat has been exported, mainly for the horticultural peat market.

Keywords: *peat, growing media, horticulture, energy, export*
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Introduction

Latvia is rich in peat resources, reaching 1.5 billion tonnes in the peatlands, and there are significant mineral deposits in the country. Peat is widely used as a fuel and for agricultural purposes and was an essential part of the national economics during the 20th century (Šnore 2013). So far only 4% of all peatland areas in Latvia have been used for peat extraction, but the purposes of peat use changed significantly in the period between 1920 and 2020 as a result of social, economic and political processes (LKA 2019).

Peat use dates back at least to Roman times, when it was mentioned as being used as a fuel in homes. Peat became an energy source in Europe during the 12th century, especially in countries where trees were scarce, like Ireland and Scotland. In the 19th century, Germany developed technology for harvesting and pressing fuel peat into small bricks, which is used in many countries up to the present day. In Finland and Ireland, it is still used on an industrial scale to generate electricity today.

Therefore, there is an impression that peat is mainly a component of energy production systems, and that it should be treated as a fuel. Many policy documents both in Latvia and in Europe are based on this assumption, but it has not been taken

into account that peat today is an irreplaceable substrate for growing vegetables and ornamental plants, as well as landscaping and forestry, and is in demand globally. Two different objectives for peat extraction should be clearly defined: peat as an energy source and peat as an essential basis for successful horticultural development. Both of these require conditions and regulations of their own. Development of such regulations and documents for the peat industry is especially important for Latvia, as 95% of harvested peat is provided for horticultural needs.

Peat extraction in Latvia is considered to have begun at the end of the 17th century and the beginning of the 18th century, when Duke Jacob ordered for peat to be used as a fuel in addition to firewood in order to save trees. However, industrial-scale peat extraction started at the beginning of the 20th century for the needs of heating and bedding (Nomals 1930; Lācis 2010). The largest volumes of extracted peat were harvested in 1960-1990, reaching seven mln. tons and, besides other ways of utilisation like bedding and soil improvement, peat was also used as an energy source, especially for the operation of the peat-fired thermoelectric power plant TEC-1 in Rīga, built in 1958, which was to be heated with peat (Snore 2013; Ozola 2016).

In 1991, when the socio-economic system in Latvia completely changed, state farms and collective farms were abolished, which drastically affected the peat extraction industry. The lack of demand for peat as well as the outdated machinery led to a dramatic decline in peat extraction. The former state-owned enterprises were privatised and means were sought to update the technology for peat extraction and processing, to seek new markets and to attract foreign investors. Taking into account the requirements and needs of the European peat market, the industry began to switch to peat extraction for horticultural purposes in the second half of the 1990s. In 1993, volumes of extracted peat started to increase, and export of peat developed, exceeding domestic consumption by 2003.

Currently, the peat extraction sector is most affected by climate issues, the transition to a "green economy" and the introduction of climate change mitigation measures. At the moment, the EU's Paris Climate Agreement sets a target of at least a 40% reduction from 1990 levels of greenhouse gas (GHG) by 2030. Currently within the framework of European Green Deal, emissions are set to be reduced by 50% by 2030, and to become completely climate-neutral in 2050.

The peat extraction industry is emission-intensive, and particular attention is paid to the extraction of energy peat. There is a global tendency to discontinue the extraction of peat for the needs of the energy sector and to extract peat only for horticultural purposes and for the production of high value-added products. A lot of countries that have so far mainly extracted peat for energy purposes have to reorganise and restructure their production.

This study aims to find out how the Latvian peat industry has developed over the last 100 years during changes in social and political conditions.

The study was carried out by collecting and analysing historical data, focusing on various purposes for peat use, determining factors in the peat industry and comparison with data from other countries.

Data and methods

The information was collected and compiled using various literature sources, both published and unpublished. The study uses data published in the 1962 and 1980 issues of Latvijas PSR Kūdras fonds; Свиклис (1970); Grosvalds (1970); Brakšs (1961); Ямпольский (1979); Eiduks, Kalniņš (1961); Clarke , Josten (2002); Karnups (2016); Lappalainen ed. (1996); and Korhonen R., Korpela L., Sarkkola (eds.) (2008).

Quantitative and qualitative data collected by the Central Statistical Bureau on Latvian exports and imports (in the 4-digit code of the Harmonized Commodity Description and Coding System) for the period from 2000 to 2018 were used. Information was collected from documents of various ages in different archives. The following information sources were also used: information from the State Geological Fund maintained by the Latvian Environment, Geology and Meteorology Centre; historical materials from Meliorprojekts; the project "Innovation in Peat Research and Development of New Products Containing It"; and the project "Preparation of Recommendations on Latvian Peat Deposit Data Quality for their Improvement and Use in the Preparation of the Basic Documents of the National Strategy"; as well as data from the Latvian Peat Association and data from the International Peatland Society (IPS).

Trends in changes in peat extraction for various needs related to political and economic developments in the country were analysed and evaluated using visual materials derived from the collected and analysed data.

Discussion

In total, 9.9% of the territory of Latvia is covered by peatlands, where 11.3 billion m³ or 1.7 billion tonnes of peat have accumulated (LEGMC 2020; Peat Fund 1980). By comparison, peatlands cover about 20% of the total area of Estonia, and the total in Lithuania is 5%. (Lappalainen 1996.)

A study was carried out which found that in the Baltic region, the average accumulation rate over the last 200 years has been about 2mm per year (Stivrins et al. 2017). This allows us to calculate that in the peatlands of Latvia, approximately 1.6 million tonnes of peat accumulates annually, while an average of 0.81 million tonnes of peat was extracted per year (1991-2019), which means that peat resources in the country have increased on average by 0.79 million tonnes per year and by approximately 22.91 million tonnes since 1991.

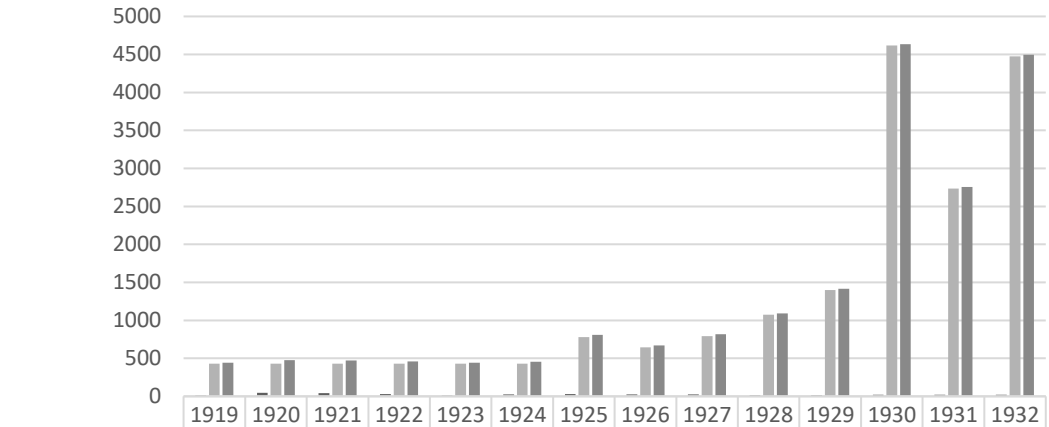
Our country is rich in peat, and it is an essential resource for its economy, and over time it has been used for various purposes. The origins of peat use in Latvia can be traced back to the 16th century; written evidence reveals its development and use at

that time in heating, bedding, dry toilets, product storage, insulation materials and agriculture (Šnore 2013; Ozola 2016).

Now peat is also used in medicine, beauty care, the textile industry, paper production, for filtration material and biosorbent, feed additive production, construction, art, etc.

As peat litter started to be produced on a larger scale in Western Europe in the 1880s and 1890s, this issue also became relevant in Latvia. As a result, in 1912, the establishment of litter peat and litter production companies began, and the cutting of peat for litter production developed (Druvietis 1957) Later, with the establishment of independent Latvia, the Peat Utilisation Board was established, which began to produce peat for energy purposes on a large scale (Figure 1). Unfortunately, demand for fuel peat fell sharply after a couple of years due to the low price of firewood (Grinduls 1933).

The extraction of larger volumes of peat began after 1924 when the first dredging machine in Latvia was received from the United States, and significant river regulation and excavation of main ditches began in all major river basins (Nomals 1936).



	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Energy peat t	11	47	40	29	12	26	29	27	26	15	16	20	20	22
Bedding peat t	430	430	430	430	430	430	780	644	792	1075	1398	4616	2735	4474
Total t	441	477	470	459	442	456	809	671	818	1090	1414	4636	2755	4496

Figure 1. **Peat extraction and use in Latvia in the years 1919–1932, tonnes** (author's figure)

At that time, the state was practically the only owner of Latvian mires. It leased mires to companies and private individuals on preferential long-term or annual leases. As of 1st January 1936, 37 mires had been leased for the harvesting of fuel peat, and 66 long-term lease agreements had been concluded. In 1935, 33,000 m^3 of cut peat was produced for incineration. At the same time, 233 state mires with an area of 2,196 ha were leased for the production of bedding peat. In 1935, 50,100 m^3 of bedding peat was produced in mires leased from the state. There were three modern bedding peat factories: in Ploči Mire near Liepāja; in Salaspils Mire near Rīga; in Pētermuiža Mire

near Līvāni. Fuel peat was also produced in all these plants. In 1936, a factory producing peat insulation boards started operating in Ploči Mire (Nomals, 1936). In the years up to 1940, the most common use for peat was bedding, with fuel peat in second place (Greste 1948).

Table 1. **Volumes of air-dry fuel peat and bedding peat produced in Latvia from 1937 to 1940, m^3**

Type of peat use	1937	1938	1939	1940
Fuel, m^3	74,000	116,000	173,000	250,000
Bedding, m^3	234,000	252,000	432,000	665,000
Total, m^3	308,000	368,000	605,000	915,000

Peat extraction volumes grew in particular in the period from 1960 to 1990, when demand for energy peat and agricultural peat increased significantly (Figure 2).

In 1958, TEC-1 was built in Rīga, which needed peat to ensure the operation of the plant. For this reason energy peat extraction developed rapidly, and several peat factories were constructed for this purpose (in Seda, Stružāni and Zilaiskalns). The second-largest consumer of milled peat was the Sloka pulp and paper mill (Šnore 2013). In the early 1960s, the extraction of agricultural peat for bedding and fertiliser also increased. By the 1970s, peat extraction was well-developed, taking place in more than 100 deposits. Around 4.3 mln. tonnes of peat was extracted annually, and used for bedding, compost and as fuel.

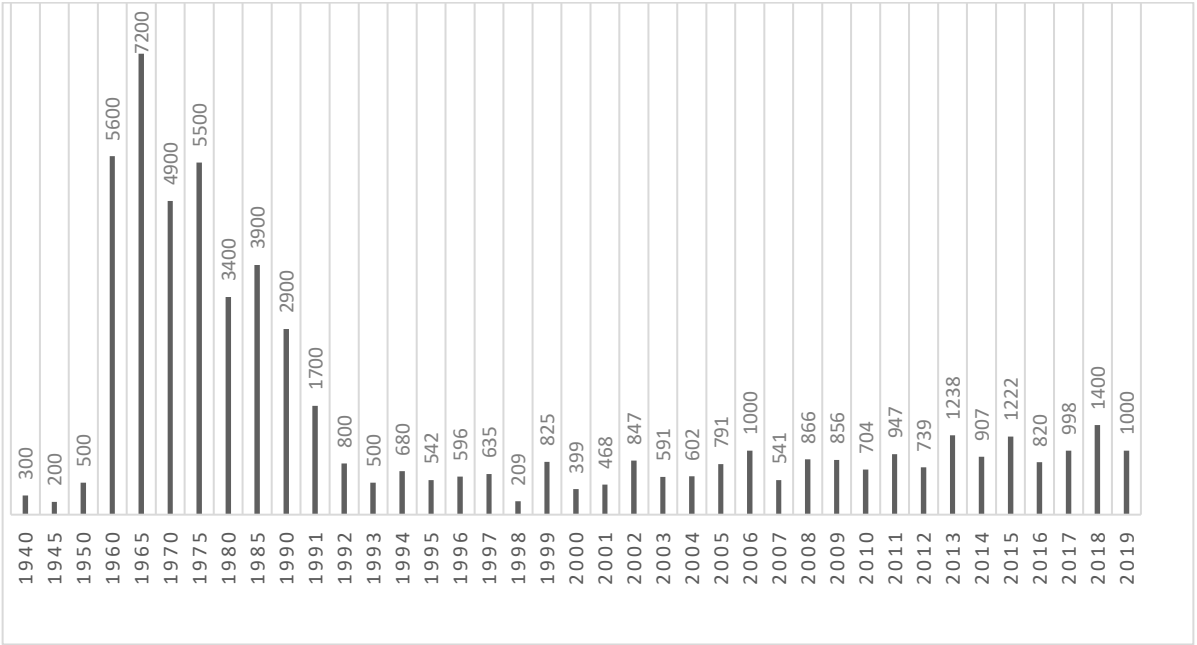


Figure 2. **Amounts of peat extracted in Latvia from 1940 to 2019, thousand tonnes per year** (author's figure)

The Latvian peat extraction industry experienced a sharp decline in 1991, when the largest peat consumers, state farms and collective farms were gradually eliminated.

The state structure changed, and peat companies were privatised. In the late 1990s, the industry began to restructure and switch to peat extraction for horticultural purposes. The peat extraction business is investment-intensive and profits in this sector are not quick to make. During this time, many foreign investors came to Latvia; they had experience in trading horticultural peat and had outlets to sell it at, as well as the opportunity to invest, and to start extracting and processing agricultural peat.

In 1993, peat extraction started to increase again. In the last 20 years the industry has stabilised and now ups and downs in peat extraction depend mainly on weather conditions and the amount of precipitation in the peat extraction season.

The use of peat for energy experienced a dramatic decline in 2003, due to TEC-1 having been rebuilt and no longer using peat to ensure its operation. Since 1998, peat extracted in Latvian has almost exclusively been used for agricultural (mostly horticultural) purposes. (Figure 3).

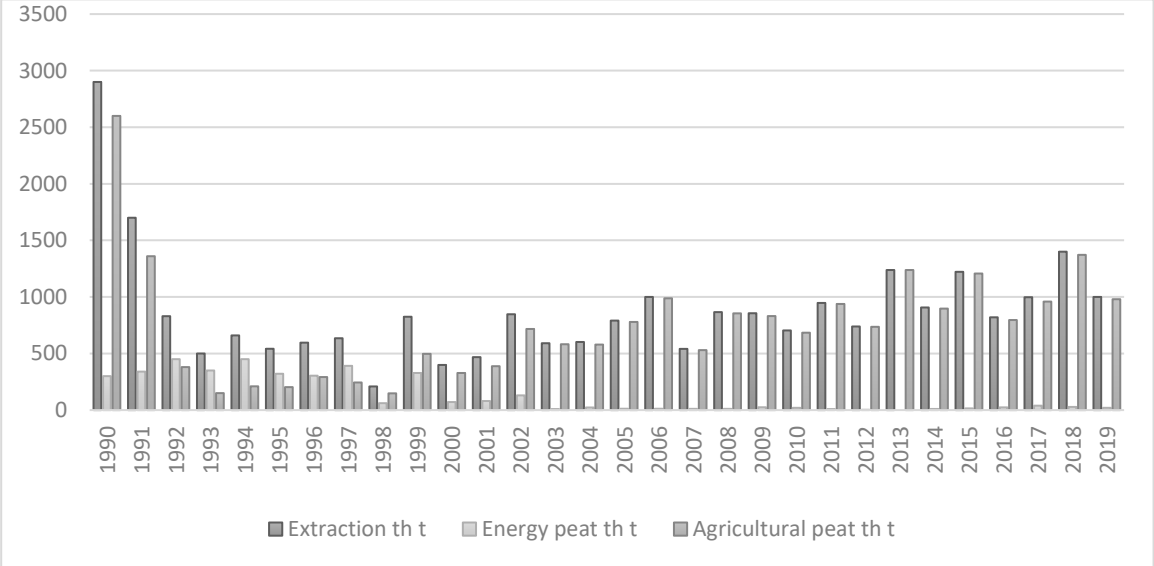


Figure 3. **Volumes of peat extraction and types of use from 1990 to 2019 (thousand tonnes)** (author's figure)

Along with the reorientation of the industry, the market for peat consumption also changed. While until 1991 extracted peat was used in the local market, after 1993 the export market started to develop, and starting from 2000 more than 90% of the peat resources extracted in Latvia were exported (Figure 4).

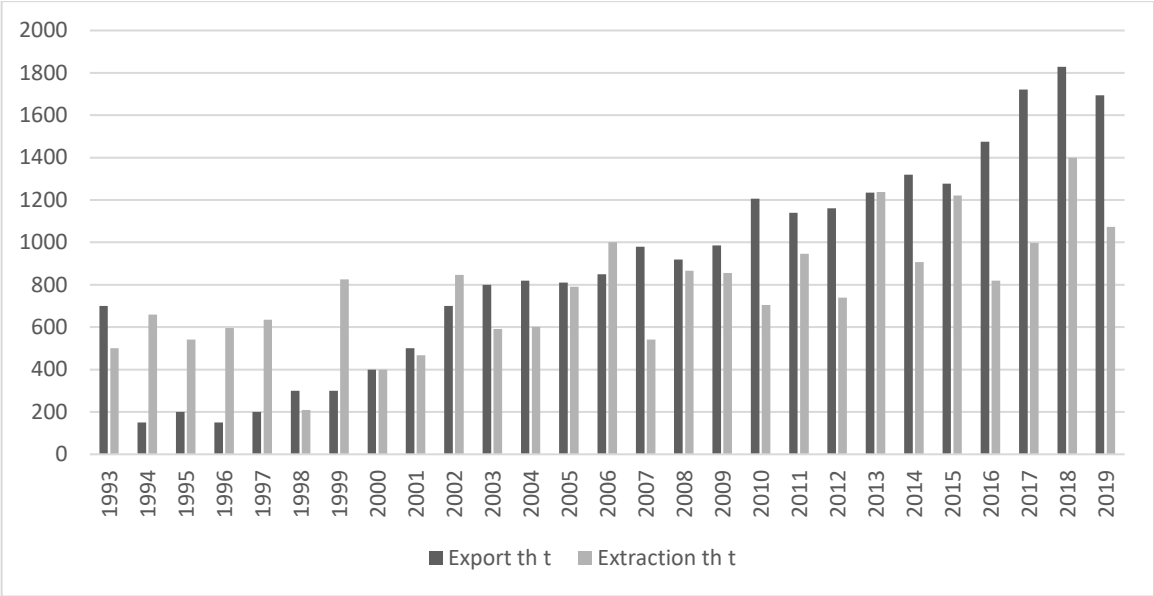


Figure 4. **Peat extraction volume and export of peat products 1993-2018, thousand tonnes** (author's figure)

Starting from 2003, export volumes started to exceed extraction volumes, indicating an increase in the production of growing media. Statistics on exports comprise all peat products, including pure raw materials and various peat products.

Latvia, in contrast with other peat-extracting countries such as Estonia, Finland, Sweden and Ireland, was the first to restructure its peat extraction industry from energy peat extraction to horticultural peat extraction. In the aforementioned countries, the majority of peat is still extracted for energy purposes (Table 2).

Table 2. **Peat extraction volumes and purposes in 2017 in various EU countries (IPS)**

Country	Peat extraction, thous. m³	Horticultural peat, thous. m³	Energy peat, thous. m³
Ireland	17,100	4,100	13,000
Sweden	3,100	1,700	1,400
Finland	11,097	1,000	9,500
Estonia	3,784	2,648	1,135
Latvia	**4,988**	**4,900**	**88**
Lithuania	2,500	1,788	712

According to data from the IPS, in 2017, 55% of peat extracted in the European Union was used for energy production, 37% for horticulture and 8% for other purposes (Figure 5).

Figure 5. **Use of peat extracted in the EU (A) and in Latvia (B) in 2017** (author's figure)

In Latvia in 2017, 95% of peat obtained was used for horticulture purposes, 4% for energy production and 1% for other needs. The situation is changing rapidly, and it is expected that, when the statistical data have been collected, more than half of peat extracted in the EU in 2019 will have been used for horticulture.

The historical situation is favourable for Latvia's peat extraction sector, as the prevailing global trend in reducing GHG emissions directly affects the use of peat for energy purposes. According to the energy regulations of the European Union, peat is considered a fossil resource. Consequently, in order to move towards climate neutrality and mitigate climate change, countries stipulate that the extraction and use of peat for energy must be reduced and gradually stopped. This has a major impact on peat-producing countries, where the main use of peat is for energy.

Latvia is the most favourably placed peat-producing country, due to the reorientation of its industry at the very beginning of this century. Now we only extract horticultural peat, which is used for growing food, ornamental plants etc. GHG emissions also result from this kind of peat use; however, the cultivation of plants in peat substrates (peat-growing media) later results in the capture of GHG emissions. For example, 6,000 tree seedlings can be grown in 1 m^3 of peat; three hectares of forest can be planted using this, and in turn will capture 1110 t of CO^2 in 50 years.

After their use in plant cultivation, peat substrates can be used to improve the soil, thus creating better conditions for plant growth and absorbing more GHG emissions.

The large amount of energy peat, which has so far dominated in peat-extracting countries, may also be the reason for shortcomings in statistical accounting, which have had and might continue to have consequences for European Union member states, as well as for the regulations of the EU and international regulations. In particular, this affects or may affect climate policy documents where peat currently is considered primarily as an energy resource.

In the statistics on external trade in goods, within the meaning of the Combined Nomenclature (hereinafter – CN), peat is considered to be an energy product ("Chapter

27. Mineral Fuels, Mineral Oils and Products of Their Distillation; Bituminous Substances; Mineral Waxes", code 2703). In the description of the CN, peat is mentioned alongside coal products. There is no other place for peat and peat products (substrates) in this nomenclature, so for companies exporting peat and peat substrates, this is the only way to report these exports.

Currently, Latvian, EU and international statistics are misleading about the use of peat. Consequently, the goal of introducing the CN – to provide internationally comparable statistics on foreign trade – is not being fulfilled.

Conclusions

Political, economic and ideological factors have affected the development of the peat extraction industry in Latvia. Extraction objectives in Latvia have changed several times, and unlike in other European countries, the use of peat for energy played a key role in Latvia only for 30 years.

The peat industry has been influenced by various kinds of peat use: the development of bedding peat, its use as fuel for home heating, its use as fuel for TEC-1 operation system and its use in horticulture.

Determining factors in the peat industry:

- Political factors – establishment of the peat industry before the First World War, Latvia's first period of independence, the period of Soviet occupation, Latvia's second period of independence (starting in 1991), foreign investors.
- Social factors – the development of workers' skills, the development of technique, the development of the EU.

For the last 18 years, peat has been extracted in Latvia primarily for horticultural needs (95%), not for energy production, as in other countries. Thus the Latvian peat extraction industry has already been restructured and can meet climate requirements significantly better than other countries

The high consumption of peat for energy in the European Union has determined the political attitude towards peat resources. In the energy sector, it is classified in the category of fossil resources, although this is a slowly renewable resource. According to the external trade statistics of the Combined Nomenclature, peat is also considered to be an energy product. There should be different approaches and regulatory frameworks for horticultural and for energy peat.

The structure of the peat market has changed over time. Until the end of the 20th century, peat was used for domestic consumption in Latvia, but since the beginning of the 21st century it has generally been exported. Currently, 93% of peat extracted in Latvia is exported. Peat products are an important part of Latvia's exports and make up 1.44% of the country's total export volume (in 2018) (CSB 2020).

Currently, climate and nature conservation aspects are the main factors influencing peat extraction. GHG emissions from extraction processes and extraction areas will be significant, as starting from 2025 countries will be required to report

emissions from economically used wetlands. Consequently, peat extraction cannot increase substantially, and the industry needs to think about emission reduction and compensation. In order to maintain the sustainability of peat extraction, compensatory measures in the field of GHG emissions must be developed for the industry. Scientific research is needed to create peat products with higher added value, thus making a greater contribution to the national economy per tonnes of GHG emissions created by peat extraction. In Latvia, only the export of processed peat should be promoted, and favourable conditions for local consumption should be created. At a national level, measurements of GHG emissions and research must be continued, in order to find the most efficient and emission-friendly way of peat resource management.

Reducing GHG emissions by reducing peat extraction is counter-productive given the growing demand for peat substrates, which is growing due to the growing population of the planet and the need for food.

The Peat Guidelines, which are a policy planning document in Latvia, stipulate that peat extraction areas and peat volumes available for extraction must be maintained at the existing amount until 2050. This would ensure the predictability of the peat extraction industry, as well as the desire to invest in the establishment of production facilities, resulting in the creation of added value to peat, and more efficient resource management. At the current extraction volume, peat resources in the country are not decreasing, because the average growth of peat in ten years' time is higher than the extraction volume.

Kopsavilkums

20. gadsimta laikā Latvijas kūdras ieguves nozares attīstību ir ietekmējušas dažādas sociālas un politiskas norises, kā rezultātā tai ir atšķirīgas iezīmes. Citās Eiropas valstīs vairākus gadsimtus kūdru lielā apjomā izmantoja enerģētikas vajadzībām, Latvijā kūdra enerģētikas vajadzībām lielā apjomā izmantota visai neilgu laiku – no 1960. līdz 1990. gadam. Latvija bija pirmā valsts Eiropā, kas kūdras ieguves nozari pārkārtoja no ieguves enerģētikas vajadzībām uz izmantošanu dārzkopībā. Sākot ar 1998. gadu iegūtā kūdra galvenokārt ir izmantota dārzkopībā. 1991. gadā, mainoties sociāli ekonomiskajai iekārtai, tika likvidēti sovhozi un kolhozi, kūdru vairs iepriekšējā apjomā neizmantoja pakaišiem un augsnes ielabošanai. Notika kūdras uzņēmumu privatizācija, tika piesaistīti ārvalstu investori. Ja līdz 1993. gadam kūdru ieguva un izmantoja iekšējam patēriņam Latvijas tirgū, tad kopš 1993. gada ir attīstījies kūdras produktu eksports, kas pārsniedz iekšējo patēriņu. Pēdējos 20 gados nozare ir nostabilizējusies un Latvijā ražoto kūdras produktu apjoms ir 31% no kopējā profesionālajā dārzkopībā izmantojamā kūdras produktu apjoma ES. Pašlaik klimata politika liek samazināt SEG emisijas un, virzoties uz klimata neitralitāti, valstis strauji samazina kūdras ieguvi enerģētikai un pārprofilējas uz dārzkopības tirgu. Latvijā kūdras nozarei vairs nav jāpārkārtojas, tā ieņem stabilu vietu pasaules dārzkopības kūdras tirgū.

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RURAL LANDSCAPES IN LATVIA: A COMPARATIVE ANALYSIS OF REPRESENTATIONS AND PERCEPTIONS

Lauku ainavas Latvijā: atainojuma un uztveres salīdzinošā analīze

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Abstract. As a reflection of Latvian identity, the country's rural landscapes are a living embodiment of both natural and cultural heritage, contributing to quality of life for local communities and serving as a magnetic pulling factor for international tourists. Traditional farmsteads (*viensētas*) are perceived as symbolic spaces which have developed gradually, especially since the 19th Century, through annual cycles of farm work alongside extensive farming. Yet their existence is threatened by the impact of transitional changes such as depopulation, globalisation, the non-competitive nature of traditional farming models, and changes in society and the lifestyle of young people. Many abandoned farmsteads are disappearing under large areas of cropland or forest, and some newly built private houses do not have a connection with the traditional rural landscape. The aim of this study is to explore the way that perceptions of farmsteads and rural landscapes have changed over time within local communities. This is done by comparing representations of countryside landscape ideals in the media from 1920 to 1940 and perceptions of farmsteads as an element of countryside landscapes within local rural communities today (<12 % of the population of Latvia lived on a farmstead in 2019). The findings show that in the period when most people lived in the countryside, a particular kind of idealised rural landscape was often visually represented in the mainstream media, strengthening stereotypes about symbolic landscapes. These concepts are still strongly rooted in the perceptions of current rural inhabitants and there was consensus among respondents about the elements which are associated with high-quality rural landscapes. Although the daily routines of the traditional farmstead today have been changed by a number of factors and many elements of the rural landscape have lost their functionality, symbolism — including the iconic image of separate family farmsteads — helps to maintain a continuing metanarrative of national identity, creating nostalgic ties which lead many to have a preference for living in the countryside, holding perceptions about the availability of various ecosystem services next door which will improve their quality of life.

Keywords: *rural landscape, farmstead, perception, identity*
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Introduction

Due to its symbolic significance to the national identity (e.g. Bunkše 1999; Zigmunde 2010; Dzenovska and Aistara 2014), the farmstead of the 16th-21st century is included in the Latvian Culture Canon. This is an acknowledgement of its great value "reflecting significant cultural achievements of the nation that should be learnt, preserved and developed creatively to serve the demands of future society" (Culture

Canon 2018) and pays attention specifically to its significance to national identity at the time of the 100th anniversary of the Republic of Latvia. This is not only because of its architectural value (Ozola 2015), but because of the value of the landscape as a whole: "as spatial formation shaping uninterrupted surface — the pattern depending both on environmental circumstances and on territorial features of people's activities" (Melluma 2012). At the same time, farmsteads are considered to be biodiversity hotspots which are often overlooked (Hiron et al. 2013; Rosin et al. 2016), although land abandonment caused by rural depopulation has significant ecological consequences. The disappearance of a fine-grained mosaic-like landscapes leads to their simplification, homogenisation and the loss of many semi-natural habitats, resulting in a reduction of biodiversity (Henle et al. 2008; Ruskule et.al. 2013). The findings of research with regards to contemporary attitudes towards nature show that they frequently differ from practical reality (Bunkše 1978). The transition of farmsteads from rural places where particular farming practices are carried out to modern dwellings with various inherited landscape elements (created for practical or aesthetical reasons) is not always coherent. Rural areas can be perceived as "something to which people belong, as to a commonwealth, a land is constituted by the people that belong to the land insofar as they have become attached or bound [to it] ... by birth, allegiance, residence, or dependency" (Olwig 2012) or "as a particular spatiality in which a geographical area and its material appearance are constituted through social and environmental practise" (Cosgrove 2006). A farmstead forms a holistic representation of the countryside for all the "outsiders" (e.g. urban people, tourists), who would like to experience it: for example, in northern Sweden, the provision of accommodation on farms and typical landscape settings are considered to be important factors for attracting tourists (Gössling and Mattsson 2002). Farm-based tourism has long traditions, in many countries dating back over a century (Dernoi 1983; Sharpley and Vass 2006), and according to Walford (2001) is the most common form of tourism on farms located in or near scenic areas. Rural landscapes contribute to additional value of the tourism services *in situ* with scenic views, also make roadsides of the transit routes towards the tourism destinations more attractive (Vugule 2013) forming designated "landscape roads" (Vugule and Turlaja 2016).

The Latvian rural landscape has been shaped by many fracture points caused by humans in the last century (see Figure 1). The impact of economic, social and political factors on the rural landscape structure and its changes has been extensively analysed in Latvia, especially by Nikodemus et al. (2005; 2010) and Bell et al. (2009), and specific aspects have been studied by Penēze (2009), Aistara (2009), Vanwambeke et al. (2012), Ruskule (2013), Vinogradovs et al. (2018) and others. Using the theory of path dependency in her research about the rural landscape, Zariņa (2010) summarises the main causes of landscape evolution comprehensively outlined in Melluma's (2012) history of the development of the Latvian landscape.

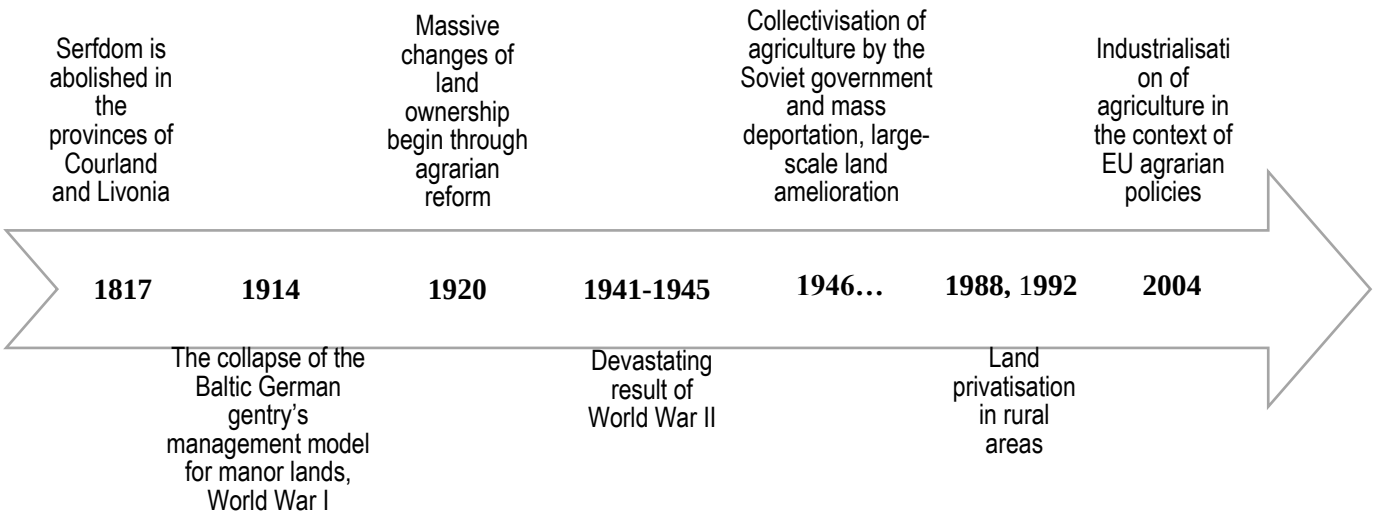

Figure 1. **Main fracture points of the Latvian rural landscape in the context of farmstead development** (authors' figure)

The rural landscape has changed not only in the context of tangible land-use practices, but also in terms of its representation and the way it is perceived. Nature and culture cannot be completely separated, and landscapes reflects the shifting boundaries between them. In a wider sense, the common heritage of the local rural farmsteads has had significant contribution both — for the lifestyle of local communities, but also created specific niche habitats for many other species. It could be said that the fate of the rural farmstead is now a global issue, due to international conventions on landscape, biological diversity and the protection of world cultural and natural heritage. The rural landscapes of today differ due to their dynamics in terms of space, time and scale, as well as people's changing views, values and behaviour (Antrop 2005). Although large stretches of rural landscapes have been modified and adjusted to meet the needs of today's societies (Xu et al. 2009), elements of the historical usage of farmsteads can almost always be seen in the natural environment in and around them. This could be a lone large tree, giving the sense of a crossroad, or a birch alley, reminding us of the beekeepers that inhabited the area (Zariņa 2010). Recent research on landscape aesthetics and the value of natural diversity done by French researchers highlight the conceptual background, current methodologies, and future challenges of assessing landscape aesthetics and its relationship with nature (Tribot et al. 2018). Humans' aesthetic perception of the rural landscape is a complex behaviour in which cultural background plays a central role. To understand this comprehensively, a combination of sociology, psychology, neurology and ecology is required.

Methods

A comparative analysis of representations and perceptions of rural landscapes in roughly the last century has been examined in this research. For historical data analysis, periodicals from 1920–1940 were used for a textual and visual analysis of the rural landscape, including photographs. To compare perceptions, a survey of rural inhabitants was conducted, with 316 surveys and 72 semi-structured interviews completed. In addition to research using the work of other authors, the following research questions were determined as being the thematic focus of this research:

1) how were rural landscape ideals (and elements connected to the quality of rural landscape represented in the media a century ago (1920–1940) during the formation of the newly independent state and nation?
2) how does modern rural society perceive rural landscapes and what value is attributed to rural landscapes and farmsteads?

The research comprises several successive stages. First, identifying the representative elements of the Latvian rural landscape during the 1920s and 1930s (the qualitative research method used was visual content and photography analysis). The so-called "repetition method" was mostly used ("repeat photography" is a method in visual anthropology) to compare photographs of a specific area during different time periods. The landscape is recognised as an element in social processes (Hirsh 1995; Smith 2007; Metcalfe 2016). This research was based on work by Bell (2001) and Rose (2016), which claim that visual analyses focused on both the contents of the visual material as well as the expression can be used. During visual content analysis, the researcher counts and analyses how often specific visual elements figure in certain images (Rose 2016). For the purpose of this study, we chose to group and count the frequency of landscape-forming elements visible in the photos: for example, forests, water bodies, dunes, large trees, meadows, pastures, cornfields, elements installed around the farmsteads: roads, wooden fences, wells, bee hives, stork nests, bird cages, electrical poles etc. Next, photographs from *Atpūta*, the most popular weekly paper (842 editions) during the period 1920–1940 were used as a source (obtained using the digital periodical archive of the National Library of Latvia: http://periodika.lndb.lv). The weekly paper had a wide range of readers and circulation increased from 6,000 in the mid-1920s to 70,000 by the end of the 1930s. It was informative and rich in photographic content, despite being the cheapest and most popular weekly publication of the time, serving as an influence on lifestyles among Latvian society. Simultaneously, a textual analysis was conducted on publications of the same time period (*Zeltene*, *Ilustrēts žurnāls*, *Latvijas jaunatne*, *Latvijas tūrists*, *Daba*, *Magazina*, *Sējējs*, *Rīts* and *Dzimtenes atskaņas*). Keywords were searched for in articles: "landscape", "view", "farm", "fields", "cultivated", "well-kept", "typical", "farmstead", "new farm", "old farm", "homeland" and "farmyard". Thirdly, to understand current perceptions of landscapes, primary data was obtained by surveying local community members. This was done mainly using preference judgment variables tested in the research of Sevenant and Antrop (2009). A semantic differential scale

with six rating options was used to assess where participants fell on a continuum of various landscape attributes. Although it is difficult to offer clear polar-opposites in terms of representations of landscape perception (e.g. should farmyards be calm or active), in practice participants were easily able to choose from the options given.

The respondent sample (n=316) included owners of farmsteads located in all 110 rural municipalities and locations outside the densely populated areas of Latvia. Most respondents (n=162) lived on their property, the rest managed the land without direct ownership or visited their property only during the summer. Property rights to manage land were mostly inherited from ancestors (n=144) or obtained after 1991 (n=133) by buying the property. In 75 cases, the surveyed farmsteads were in protected natural areas. Gender balance was almost equal, and the respondents ranged in age from 18 to 89, with the largest number being in the group 41-50 (n=87). The majority of respondents worked in the private sector (n=136), fewer in the public sector. Out of the 316 surveyed farmsteads, 72 were visited for semi-structured interviews carried out on the spot and a visual inventory of the landscape elements found there. Additional desk research was carried out using the available historical cartographic material. To ensure that the sample was representative, various criteria were applied, including selection of different locations, lifestyle of the owner, employment, main source of income for the household, period of the farmstead's origin, population density and regularity of stay (which in turn affects the priorities and spatial relationships of the landscape elements which have been saved and maintained).

Results

Representations of the rural landscape: 1920-1940

The analyses of images of the Latvian countryside reproduced in the publication *Atpūta* during the period shortly after the creation of the independent Republic of Latvia (see Table 1) demonstrated ideas prevalent within society of "what constitutes a pleasant rural landscape" (or what doesn't) and revealed a consensus that rural life was more valuable than urban life. Stand-alone trees, large trees, forest, meadows, pastures, cereal fields, crops tied in bundles and linen are important landscape elements of the historical landscapes represented there. Elements of farmsteads are visible in historical photographs: wooden fences and horse silage, wells, bird cages, fishing gear, electricity poles, stork nests, beehives and wild animals. Road and small paths were photographed as linear landscape elements.

Table 1. Representation of landscape-forming elements contained in photographs in the magazine *Atpūta* (1920-1940)

(n=842 issues with 454 photos analysed)

Landscape elements represented	**Proportion from all photos presented (%)**
stand-alone trees	69.4
incl. large trees	1.8
forest	42.7
meadow	27.8
cereal fields	9.9
animals (livestock, pets)	4.8
pasture	3.7
Elements of the farmyards	**%**
road	14.8
wooden yard	8.1
electric poles	7.0
small paths	6.2
fishing gear (pots, nets)	3.7
water well	0.9
bird nest box or stork nest	0.7
beehive	0.2

The aesthetic taste of rural society was repeatedly influenced by presenting the best maintained farms as benchmark examples. This corresponds to the results of analyses done on regional newspaper discourse in the same period (Lipša 2011). There was also a clear political aspect (as two-thirds of all inhabitants with voting rights lived in the countryside by that time). Of all the regions, the most popular countryside landscapes in photographs were from Vidzeme (56 %) and Kurzeme (16 %). The Daugava river valley (10.8 %), including 160 different places, was reproduced most frequently, followed by the Gauja river valley and the uplands of Vidzeme. From the analysis of media discourse there was no confirmation that ideas about nature conservation were important factors in decision-making processes regarding the land management of farmyards. The dominant factors were issues of practical management in combination with aesthetic considerations, respect for the ancestral landscape heritage, a desire to demonstrate the status of a wealthy landowner and fear of being perceived as a bad landowner by others.

Perception of the modern rural landscape

Rural society has common and persistent perceptions of what constitutes rural landscape characteristics although several generations have passed since the pre-war

period. Common elements of such landscapes are open gaze perspective with pronounced geomorphological formations (e.g. hills), nearness of bodies of water, big old trees, traditional farmsteads housing, patches of forest and winding roads. It is diverse, rich, varied, intriguing, emotionally moving and engaging, rather than predictable, monotonous, uniform and symmetrical. Recent trends in development in the Latvian countryside prove that although most rural commercial accommodation is located near water bodies with scenic views, and self-catering rural holiday homes for tourists are increasingly available, the number of farms which offer countryside lifestyle experiences and accommodation is decreasing (147 are left, down from several hundred 20 years ago). Stereotypical perceptions were reproduced in the survey of countryside landowners almost a century later — the symbolic countryside landscapes seen as being the highest quality are: the Gauja National Park (n=99), the seaside (n=71), the Vidzeme uplands and the Daugava river valley.

Understanding how farmstead owners think about their farmyard landscape and what influences the process of creative place-making, will facilitates dialogue about taking pro-active measures towards the maintenance of nature or culture heritage. The terms “rural”, “backyard” or “outdoors” are often used by landowners and express a sense of local space in contrast to the urban environment. Local space has been enriched with narratives about ancestors, lifestyles, work routines and identity. Space is perceived as possessing a place-making power, where certain images and shapes can be created through the landowner’s personal knowledge, understanding, attitudes and decisions. These microcosms are visible to the public gaze and are perceived as either typical or atypical rural landscapes. From the landowners’ point of view, farmyards are dynamic spaces where culture and landscape heritage from the past co-exists with new design elements according to the needs of contemporary lifestyles. Compared to the city, they can more easily create an ideal space in a rural area (see Table No. 2), where there is harmony between nature and human needs. This is seen as one of the advantages of permanent residence in the countryside.

Table 2. Summarised perceptions (by the number of respondents) expressed by landowners regarding the character of the rural landscape in Latvian farmyards (n=316)

Character feature	***1***	***2***	***3***	***4***	***5***	***6***	***Character feature***
rational	5	27	55	98	67	60	romantic
practical	36	78	93	67	27	12	aesthetic
with extensive garden	101	68	78	42	17	5	gardening limited to flowerbeds
calm	80	71	87	41	24	9	active/stimulating
fenced, closed-off	7	24	40	68	87	86	open, accessible
safe	140	94	47	13	16	1	unsafe
with lot of small details	13	41	60	77	85	35	with some key accents
with new design elements	6	28	90	89	65	34	as ethnographic as possible
modern	2	9	40	101	96	64	traditional
for butterflies, insects	175	76	37	18	6	0	for pest and weed control

Character feature	***1***	***2***	***3***	***4***	***5***	***6***	***Character feature***
birdsong	220	56	27	7	2	1	loud music in farmstead
well-groomed lawn	21	38	68	83	61	42	natural grassland
well-maintained, cultivated	44	69	82	73	34	10	subject to natural processes
diverse	133	79	56	30	13	3	monotonous
mosaic-like	50	63	77	56	45	22	solid, unfragmented
open/transparent	67	89	95	40	16	5	impenetrable, opaque
natural	75	81	81	45	25	7	man-made
space for nature	64	69	100	48	25	6	man's needs over nature

Typical countryside farmsteads are characterised by landscape elements such as old trees (mostly oaks), older apple orchards, yards laid out in a harmonious way, a well, flowerbeds, location next to natural grassland or forest and an open view of the landscape from the yard. When asked about their ideas regarding the future development of their farmyard landscape, most landowners answered that they would like to develop their property (houses), dig a pond, build a traditional bath house (sauna), invest in access road quality or build a fence or construct additional facilities in the yard — the maintenance of biodiversity was not a priority. Different ideas are held about the proper role of the local municipality in the maintenance of rural landscapes: including road improvement, the removal of abandoned buildings (on old farms), comprehensive strategic planning and measures to motivate individuals to improve the quality of rural landscapes.

There is a consensus that many ancient ethnographic elements have disappeared at high speed in recent decades from Latvian rural farmsteads, especially those with reduced functionality (e.g. wells, outdoor toilets and cellars). There has been a massive decrease in the number of households keeping small numbers of livestock and carrying out other agricultural activities (and so there has been a disappearance of haystacks, cattle sheds, stockyards, pastures etc.). There is a greater range of building materials available; the use of bright colours sometimes creates disharmony, and the proportional volume and traditional shapes of houses are changing. In general, the landscape is becoming simplified and monotonous forms are developing due to the intensification of agricultural practices.

Associated with rural farmsteads landscapes of a "poor" quality are excessively high, non-transparent fences, scrap piles left in yards, and the architectural inconsistencies created by the presence of many small huts and sheds or inappropriate building materials. Imitation of the urban environment has reduced the advantages of rural areas. Certain tastes also add to this, such as adding to the landscape artificial garden dwarfs, plaster figures, flowerbeds in old tyres or the excessive presence of exotic plants not typical for local conditions. The quality of the landscape is affected by carelessness, the presence of overgrown yards and general lack of management.

There are two general trends evident among landowners in the 21st century concerning the management of farmsteads. Either the boundary between human space within the yard and nature has become sharper (fences, large properties with

maintained lawns, concrete paving) to keep the wilderness or nature out, or the border has become blurred and nature is widely integrated into the human space, benefiting from usage of various ecosystem services (see Andersson 2015). In that case, natural elements are used partly as a natural design feature.

Figure 2. **Grey partridge in natural grassland, next to a traditional Selonian region countryside farmstead equipped with satellite antenna in the Dviete floodplains nature park** (authors' photography)

Conclusion

This research has contributed to the knowledge accumulated by other researchers about the transformation of the structure of the Latvian rural landscape and the impact of economic, social and political factors (e.g. Bunkše, Melluma, Nikodemus, Bell, Penēze, Zariņa, Aistara, Dzenovska, Ruskule, Vinogradovs and others). A comparative analysis of representations and perceptions over the course of a century prove that certain stereotypical perceptions about symbolic landscapes and idealised elements of rural landscape characteristics were reproduced by the rural community in a very similar way to how they were represented in the media before the Second World War. Certain representations of symbolic rural landscapes in the media after the emergence of the new Latvian state were chosen for political reasons, due to the fact that the majority of the electorate were living in the countryside. Certain ideas about ideal elements of rural landscapes were cultivated by the media. To achieve this, best benchmarks were used, as well as shaming those who were considered bad landlords.

The results of this research confirmed the findings of Bunkše (1999) about the importance of the rural landscape and particularly its symbolism, including the iconic image of separate family farmsteads in the continuous metanarrative of national identity during the post-Soviet, postmodern era. However, in the past, iconic images of separate family farmsteads with clusters of architectonically distinct buildings (e.g.,

the main house, byres, a stable, a large threshing barn, small granaries, a sauna) have always included the owners' never-ending working and activities in the courtyard and in the surrounding fields, adjacent forests etc., which have changed quite drastically over time. Many of these rural landscape elements have been preserved but their future preservation is in doubt as this has partially been done artificially, and there are no real functions remaining for these elements. Changes of land use in rural areas have been so intense that they have affected most of the main landscape components: forests, mires, semi-natural grasslands, river meanders and places of settlement. Farmsteads have, so far, been one of the elements in this holistic system which have been more resistant to change, because they were permanently inhabited by people who regularly carried out routine rural activities (mowing grass, harvesting, growing flowers and apple trees, pasturing cattle etc.). However, despite the existence of daily routines and a succession of generations living in the same place, continuous and gradual changes to Latvian rural farmsteads can be traced. Some landscape elements are more resistant to change (geographical formations, old trees, driveways, apple orchards), others are disappearing (including a number of smaller-scale architectural ethnographic elements that are in poor condition, no longer function or are sometimes associated with regression rather than a postmodern lifestyle, such as wells and woodpiles). Several new elements of the landscape that serve the needs of its inhabitants can be found (leisure elements and outdoor entertainment spaces, exotic plants, garden or yard decor, lighting elements, etc.). There has been further polarisation of daily routines that shape the landscape from the social side: elements used for relaxation purposes and the use of ecosystem services is dominant in cases where households aren't dependent on local resources. Although more frequent mobility is involved, more productive use of agricultural lands and larger monotonous forms are developing. In cases where households are dependent on local resources, different intermediate forms still co-exist (such as having a small garden or monthly income coming partially from doing a job in the nearest town, etc.). This partly depends on the location of the farmstead — how far it is from a town and how the physical geographical conditions there correspond to the likelihood of agriculture or forest management being the main source of income for households. Other social factors are also important — e.g. lifestyles, amount of time spent on farmstead (e.g. the number of seasonal second homes are increasing) etc. Environmental conditions, landscape harmony and biodiversity create important advantages in terms of quality of life for the countryside when compared to urban areas, and these are encouraging farmstead residents to think about nature conservation.

Kopsavilkums

Tradicionālā Latvijas lauku viensētu ainava pēdējo simts gadu laikā krasi mainījusies. Jaunsaimniecību skaits, kas izveidojās pēc 20.gs sākuma agrārās reformas, ir teju puse no mūsdienās apdzīvotajām lauku viensētām (~12 % apdzīvotības). Vienlaikus ir vairāk nekā 29,5 tūkstoši pamestu viensētu. Agrārajai politikai valsts pirmsākumos un valdošajiem ideāliem bija liela ietekme gan praktiskajā, gan estētiskajā lauku dzīvesveida un ainavas veidošanā. Lauksaimniecība bija galvenais

viensētu iedzīvotāju iztikas avots ar lielu iesaistīto cilvēku skaitu. Zemais darba ražīgums radīja pakāpenisku ietekmi uz cilvēka un dabas mijiedarbībā veidotajām dzīvotnēm, ļaujot daudzām sugām pielāgoties šiem īpašajiem apstākļiem. Tomēr mūsdienu vajadzības, dzīvesstils un mobilitāte, ienākumu avotu dažādošanās un tehnoloģiskās iespējas turpina mainīt lauku viensētu ainavu. Izzūd pašuzturošai saimniecībai raksturīgie funkcionālie un etnogrāfiskie elementi, tiek vienkāršota tradicionālā pagalma struktūra, mainās skatu perspektīvas, reģionos ar intensīvu lauksaimniecību ainava kļūst monotonāka un tiek ieviesti jauni ainavas elementi. Izzūd dabas daudzveidību veicinošo elementu klātbūtne, jo nav praktiskas sasaistes ar mūsdienu dzīvesveidu, trūkst arī zināšanu. 21. gs. Latvijas lauku viensētas vērtību ietekmē pretstatījums pilsētvidei: saskanīga ainava kā nozīmīga dzīves kvalitātes sastāvdaļa, kurā cilvēka dzīves telpa un daba ir vairāk integrēta. Nacionālās identitātes vērtības līdzās dabas daudzveidības klātbūtnei un ekosistēmas pakalpojumu pieejamība palielina lauku viensētas kā konkurētspējīgas dzīves vietas priekšrocības.

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SEZONALITĀTE LATVIJAS AINAVĀ: DABAS RITMU KALENDĀRS

Seasonality in the landscape of Latvia: a phenological calendar

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Anotācija. Fenoloģisko parādību, piemēram, lapu plaukšana, ziedēšana, putnu migrācija, izmaiņas ir viens no redzamākajiem, pamanāmākajiem klimata pārmaiņu indikatoriem. Pētījumā veikta līdz šim pilnīgākā fenoloģisko datu analīze Latvijas teritorijai laikā no 1970. līdz 2018. gadam. Ir apskatītas 148 sešu taksonomisko grupu fenoloģiskās fāzes: augi, dzīvnieki, kukaiņi, abinieki, zivis, sēnes, kā arī kultūraugi, atsevišķi nošķirot abiotiskās parādības, piemēram, pirmais sniegs, pēdējā pavasara salna un saimnieciskās darbības, piemēram, lopu ganīšanas sākums, kartupeļu stādīšana u.c. Pētījumā apkopoti vēsturiskie brīvprātīgo novērotāju dati no "Dabas un vēstures kalendāra" un "Latvijas Avīzes gadagrāmatas". Rezultātā ir izveidots Latvijas ainavas dabas ritmu kalendārs, norādot fenoloģisko fāžu visbiežāko jeb raksturīgāko iestāšanās laiku, kā arī visagrākās un vēlākās iestāšanās vērtības periodā no 1970. līdz 2018. gadam.
Atslēgas vārdi: *dabas ritmu kalendārs, sezonalitāte, Latvija*
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Ievads

Fenoloģija ir zinātnes nozare, kas pēta sezonālās norises dabā, kontekstā ar tās ietekmējošajiem faktoriem. Fenologi fiksē un novēro "fenoloģiskās fāzes" – viegli identificējamas norises dabā, piemēram, ziedēšanas sākumu vai pirmo sniegu. Sezonālās norises visbiežāk ietekmē meteoroloģiskie apstākļi, piemēram, gaisa temperatūra un nokrišņu režīms. Tas nosaka pastiprināto interesi par fenoloģiju kā metodi klimata pārmaiņu novērtēšanā, definēšanā un pierādīšanā. Fenoloģisko datu analīze tiek raksturota "*kā lētākais, ērtākais, vieglākais veids, kā pierādīt un pamatot klimata mainību"* (Koch et al. 2009).

Identificējot svarīgākās indikatorsugas (konkrēta, raksturīga un viegli identificējama attīstības fāze (Kalvāne 2011)) vai arī aprakstot visas norises dabā, jau izsenis ir veidoti fenoloģiskie kalendāri. To veidošanas metodes un reprezentācijas formas ir atšķirīgas. Tomēr to visu mērķis ir parādīt norises dabā hronoloģiskā secībā. Fenoloģisko sezonu indikatori un sezonu skaits zinātniskajā literatūrā atšķiras, piemēram, Vācijā izšķir desmit fenoloģiskās sezonas, sākot ar pirmspavasari, ko iezīmē lazdas *Corylus avellana* ziedēšanas sākums, un beidzot ar ziemu, kuras sākumu definē kā ozola *Quercus robur* lapu krišanas sākumu (Kaspar et al. 2015). Lietuvā (Kuliene and Tomkus 1990) agrā pavasara sākuma indikatīvā fāze ir āra bērza *Betula pendula* sulu cirkulācijas sākums, pavasara sākums ir āra bērza *Betula pendula* lapu plaukšanas sākums. Latvijā ir tikušas nošķirtas 9 līdz pat 12 fenoloģiskās sezonas (Krauklis un Draveniece 2004; Sproģe 1979). Par pavasara sākumu tiek pieņemts

lazdas *Corylus avellana* ziedēšanas sākums (Krauklis un Draveniece 2004), sniega kušanas sākums (Sproģe 1979) vai māllēpes *Tussilago farfara* ziedēšana (Ģērmanis 2003).

Pētījumā mēs apkopojām vairāk nekā 40 tūkstošus brīvprātīgo novērojumu par 148 fenoloģisko fāžu iestāšanās laiku Latvijā laika periodā no 1970. līdz 2018. gadam.

Pētījuma mērķis ir raksturot fenoloģisko fāžu iestāšanās vērtību hronoloģisko sadalījumu – iestāšanos laikā un temporālās svārstības jeb agrākās un vēlākās vērtības. Novērojumu datu kopa aptver 6 taksonomiskās grupas, kā arī abiotiskās parādības un saimnieciskās darbības.

Dati un metodes

Fenoloģiskie dati

Pētījuma pamatā ir brīvprātīgo novērotāju dati, kas iegūti visā Latvijas teritorijā. Fenoloģiskie dati digitalizēti no "Dabas un vēstures kalendāra" (no 2005. gada Daba un vēsture; no 2014. gada Latvijas Avīzes Gadagrāmata), aptverot 148 fenoloģiskās fāzes 81 novērojumu stacijā. Digitalizēti visi "Dabas un vēstures kalendārā" pieejamie dati. Datu bāzē ir vairāk nekā 40 tūkstoši ierakstu par augu, dzīvnieku, putnu, abinieku, kukaiņu, sēņu, zivju fenoloģiskajām fāzēm, kā arī saimniecisku darbību un abiotiskajām parādībām laika periodā no 1970. līdz 2018. gadam. Šis ir pilnīgākais fenoloģisko datu avots Latvijā digitālā formātā.

Dati pētījumā analizēti un apstrādāti R programmā (R Core Team 2019), kas ļauj operēt ar liela apjoma datiem. Digitalizētie dati pieejami MS Excel formātā, padarot datu bāzi lietotājiem draudzīgāku.

Datu kvalitāte

Digitālo datu kvalitātes kontroles mērķis bija identificēt ekstrēmas, maz ticamas vērtības, konstatēt un novērst datu apstrādes laikā pieļautās kļūdas. Datu kvalitātes un ticamības kontrole tika veikta, izmantojot modificēto Rutishauzera un līdzautoru pieeju (Rutishauser et al. 2019), ietverot trīs soļus:

1. Globālā ekstremālo vērtību identifikācija (Tests-1): aprēķinot katra novērojuma novirzi dienās no konkrētā gada un fāzes mediānās vērtības un aprēķinot katrai fenoloģiskajai fāzei raksturīgās iestāšanās laika izkliedes vērtību kā standartnovirzi dienās. Visi novērojumi, kas atšķīrās vairāk kā par 4 fāzei raksturīgajām standartnovirzēm no gada mediānas vērtības, tika atzīmēti kā iespējami kļūdaini.
2. Lokālo ekstremālo vērtību identifikācija (Tests-2) tikai stacijām, kur ir vismaz 10 aktuālās fāzes novērojumi (65% no visiem novērojumiem): kā ekstremālus identificējot novērojumus, kas no fāzes un stacijas mediānās vērtības atšķiras par vairāk kā 3 standartnovirzēm. Šādi kā ekstremāli tika konstatēti 44 jeb 0,15% no visiem novērtētajiem novērojumiem.

3. Pareizās secības kontrole (Tests-3): tika novērtēts, vai vienā stacijā un gadā uzrādītās vienas sugas fenoloģiskās fāzes veido pareizu secību, piemēram, vai labības asnošanās fāze ir pēc sēšanas u. tml.

Novērojumi, kas tika identificēti kā, iespējams, kļūdaini, tika salīdzināti ar oriģinālo publikāciju, ja nepieciešams, un laboti. Atlikušos identificētos, iespējams, kļūdainos novērojumus vērtēja divi eksperti, atzīmējot kā maz ticamus vai ticamus.

Fenoloģiskais kalendārs

Pētījuma mērķis bija izveidot dabas ritmu jeb fenoloģisko kalendāru, lai hronoloģiski raksturotu norises Latvijas ainavā. Pēc datu kvalitātes kontroles tika aprēķināta katras fāzes visbiežākā iestāšanās vērtība Latvijas teritorijā, neņemot vērā reģionālās atšķirības. Visbiežākā vērtība tika aprēķināta no visu pieejamo datu kopas (datu kopa: visi novērojumu punkti – viss fāzes iestāšanās laiks –visi gadi), kalendārā norādīta arī periodā fiksētā visvēlākā un visagrākā vērtība vai ekstremālās vērtības (individuālā novērojuma punkta vērtība) visā novērojumu periodā (1., 2. attēls). Atsevišķi ir norādītas savvaļas augu un dzīvnieku sugas un domesticētās jeb pieradinātās (mājas) augu un dzīvnieku sugas. Otrā grupa ietver arī saimnieciskās darbības, piemēram, sēšanas sākums, lopu ganīšanas sākums u. tml.

Līdzīga rakstura fāzes, kas iestājas ar dažu dienu intervālu, ir apvienotas. Piemēram, upeņu un jāņogu (*Ribes rubrum L., Ribes nigrum L.,*) lapu plaukšana, kā arī nogatavošanās iestājas dažu dienu laikā, tāpēc kalendārā tās atainotas kā apvienota, proti, viena fāze. Līdzīgi, dzeltengatavība rudziem, miežiem un citiem ziemājiem vai vasarājiem ir apvienota vienā fāzē: dzeltengatavība. Lapu dzeltēšana Latvijā notiek divos posmos, līdz ar to ir nošķirtas divas lapu dzeltēšanas fāzes: pirmā, kas ietver bērza, kļavas, liepas un lazdas lapu krāsošanās sākumu, un otrā, kas ietver apses, zirgkastaņas un ozola lapu dzeltēšanas sākumu (1. attēls). Fāzē – lapu krišanas sākums – apvienotas sugas ar līdzīgu fāzes iestāšanās laiku, atsevišķi norādot sugas, kam lapu krišana sākas agrāk vai vēlāk. Gājputnu atlidošana ir sadalīta trīs grupās: pirmie gājputni (cīruļi, ķīvītes, slokas un strazdi (*Alauda arvensis, Vanellus vanellus, Scolopax rusticola, Sturnus vulgaris*)*;* aprīļa (baltā stārķa *Ciconia ciconia* un cielavas *Motacilla alba*, zosu atlidošana) gājputni un maija gājputni *(*bezdelīgas *Hirundo rustica* atlidošana un dzirdama dzeguzes *Cuculus canorus* un lakstīgalas *Luscinia luscinia* pirmā dziesma).

Rezultāti

Pētījumā ir izveidots Latvijas ainavas dabas ritmu jeb fenoloģiskais kalendārs, aptverot datus par 148 fenoloģisko fāžu norises laiku periodā no 1970. līdz 2018. gadam, aprēķinot visbiežāko fāzes iestāšanās vērtību, kā arī ietverot datus par fenoloģiskās fāzes izkliedi – agrākais un vēlākais fāzes iestāšanās laiks. Ir izveidoti divi kalendāri, nošķirot savvaļas sugas (1. attēls) un kultivētās sugas, ietverot arī saimnieciskās darbības norises (2. attēls).

Dabas ritmi Latvijas dabā

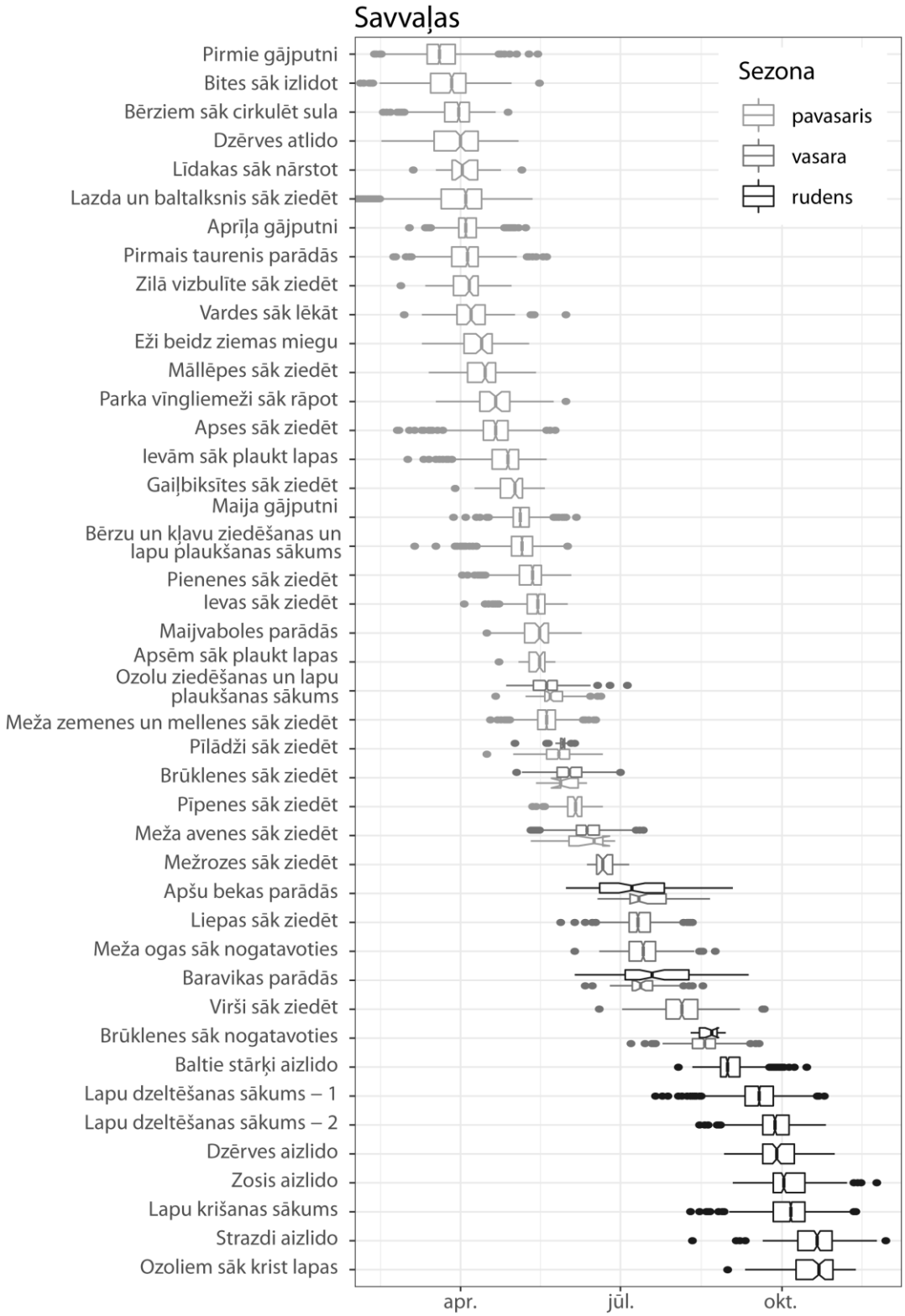
Viens no pirmajiem pavasara vēstnešiem dabā ir sniegpulkstenītes *Galanthus nivalis L.* ziedēšana, kas Latvijā visbiežāk vērojama marta vidū, ap 17. martu. Šajā pašā laikā var dzirdēt pirmās gājputnu dziesmas vai pamanīt tos atgriežamies – cīruļi, ķīvītes, slokas un strazdi (*Alauda arvensis, Vanellus vanellus, Scolopax rusticola, Sturnus vulgaris*) atlido 16.-19. martā. No stropiem izlido pirmās medus bites *Apis mellifera* (21. marts). Koku veģetācijas attīstības sākumu iezīmē āra bērza *Betula pendula* sulu cirkulācija (29. marts) vienlaikus ar ledus iešanas beigām Latvijas upēs. Vieni no agrākajiem ziedētājiem – parastā lazda *Corylus avellana L.,* baltalksnis *Alnus incana* – visbiežāk zied aprīļa pirmajā nedēļā (ap 1. aprīli), vienlaikus ar līdaku *Esox lucius L.* nārstošanu un baltā stārķa *Ciconia ciconia,* cielavas *Motacilla alba* un zosu *Anser anser* atlidošanu. Otrajā aprīļa dekādē izlido pirmie taureņi, zied zilā vizbulīte *Hepatica nobilis Mill*., ziemas miegu "beidz" vai parādās eži un vardes. Pirmajai no augiem lapas plaukst ērkšķogai *Grossularia reclinata (L.) Mill.* – 16. aprīlis, savukārt visvēlāk – osim *Fraxinus excelsior L.* – 24. maijā. Aprīļa beigās, maija sākumā Latvijas dabā vērojama masveida lapu plaukšana un ziedēšanas sākums – ap 22. aprīli notiek pļavu zaļošana un ievas *Padus racemosa* lapu plaukšanas sākums. Maija pirmajā nedēļā lapas plaukst jāņogām *Ribes rubrum L.,* upenēm *Ribes nigrum L.,* ceriņiem *Syringa vulgaris L.*. Maija sākumā vienlaikus ar ziedēšanas sākumu plaukst arī bērzu *Betula pendula* lapas, atlido bezdelīgas *Hirundo rustica* un dzirdama dzeguzes *Cuculus canorus* un lakstīgalas *Luscinia luscinia* pirmā dziesma. Šajā laikā sākas arī lauka darbu sezona, piemēram, kartupeļus visbiežāk sāk stādīt 12. maijā. Maija vidum raksturīga ievu ziedēšana, šajā laikā zied arī upenes, ķirši un oši. Mājas un meža zemenes sākt ziedēt ap 17. maiju, vienā laikā ar ozoliem *Quercus robur L.* un zirgkastaņām *Aesculus hippocastanum*. Ābeles *Malus domestica Borkh*., ceriņi *Syringa vulgaris L.* un kreimenes *Convallaria majalis L.* sāk ziedēt ap 20. maiju, kad parasti tiek fiksēta arī pēdējā pavasara salna. Jūnijs atnāk ar brūklenes *Vaccinium vitis-idaea L.* un pīpenes *Leucanthemum vulgare Lam.* ziedēšanu, pirmajiem kartupeļu asniem (4. jūnijs), labības vārpošanu. Āboliņš un jasmīni *Philadelphus coronarius L*. zied jūnija vidū (ap 14. jūniju), kad sāk pļaut sienu. Mežrozes (visbiežāk tiek novērota krokainā roze *Rosa rugosa Thunb.),* kas iezīmē fenoloģiskās vasaras sākumu (pēc Sproģe, 1979), zied ap 20. jūniju. Pēc fenoloģisko novērotāju datiem pirmās sēnes, piemēram, apšu bekas *Leccinum aurantiacum,* parādās ap 12. jūliju, savukārt baravikas (*Boletus var.)* ap 16. jūliju. Liepas *Tilia cordata* – vasaras vidus indikators (pēc Krauklis un Draveniece 2004) – zied ap 8. jūliju vienlaikus ar kartupeļiem. Jūlija otrajā nedēļā sāk nogatavoties pirmās ogas – mellenes *Vaccinium myrtillus L.* (ap 9. jūliju), jāņogas un ķirši, upenes, mājas avenes (16. jūlijs). Ziemāji sasniedz dzeltengatavību jūlija beigās, vasarāji – augusta pirmās nedēļas beigās. Augusta beigās un septembra sākumā sāk nogatavoties āboli, aizlido stārķi. Ziemāju sēšana un kartupeļu novākšana ir septembra pirmie lauka darbi. Septembra vidū parasti tiek fiksēta pirmā rudens salna un sāk dzeltēt bērzu, kļavu, liepu un lazdu lapas. Septembra

trešajā dekādē aizlido dzērves un sāk dzeltēt ābeļu, ķiršu, ozolu lapas, vērojama arī ērkšķogu lapu krišana. Pārējiem kokiem lapas sāk krist oktobra pirmās nedēļas beigās (ap 6. oktobri), visvēlāk ceriņiem – 25. oktobrī, ozoliem – 20. oktobrī. No gājputniem pēdējie aizlido strazdi – 21. oktobrī. Oktobra beigās–novembra sākumā sāk veidoties ledus un uzsnieg pirmais sniegs, kas iezīmē fenoloģiskās ziemas (pēc Ģērmanis 2003) iestāšanos.

Interesanti, ka oriģinālajās "Dabas un vēstures kalendāra" publikācijās viena un tā pati fāze var būt attiecināta uz dažādām sezonām. Piemēram, pīlādžu *Sorbus aucuparia* ziedēšana ir uzskatīta gan par vasaras, gan pavasara fāzi. Attēlos tika saglabāta šī savdabīgā variācija.

Fenoloģiskajām fāzēm ir raksturīga liela starpgadu variācija jeb izkliede. Agrās pavasara fāzes, kuru iestāšanās raksturu lielākoties ietekmē gaisa temperatūras fluktuācijas, variē lielākā amplitūdā nekā vasaras vai vēlā pavasara fāzes, piemēram, lazda un baltalksnis Latvijas teritorijā visbiežāk zied ap 1. aprīli, savukārt visagrākā vērtība fiksēta 1990. gadā, kad lazda un baltalksnis sākuši ziedēt jau 24. decembrī, vēlākā perioda vērtība ir bijusi 12. maijs, kas norāda, ka agrā pavasara fāzes iestāšanās vērtības gadu no gada var variēt līdz pat 4 mēnešu intervālā. Nehomogēns raksturs parādās arī rudens fāzēm, kad lapu krāsošanās vai lapu krišanas sākuma iestāšanās vērtības variē divu mēnešu amplitūdā. Lielas svārstības no visbiežākās vērtības raksturīgas arī abiotiskajām parādībam, piemēram, pēdējais sniegs, pirmā/pēdējā salna, pirmais sniegs – gadu no gada iestāšanās laiks atšķiras.

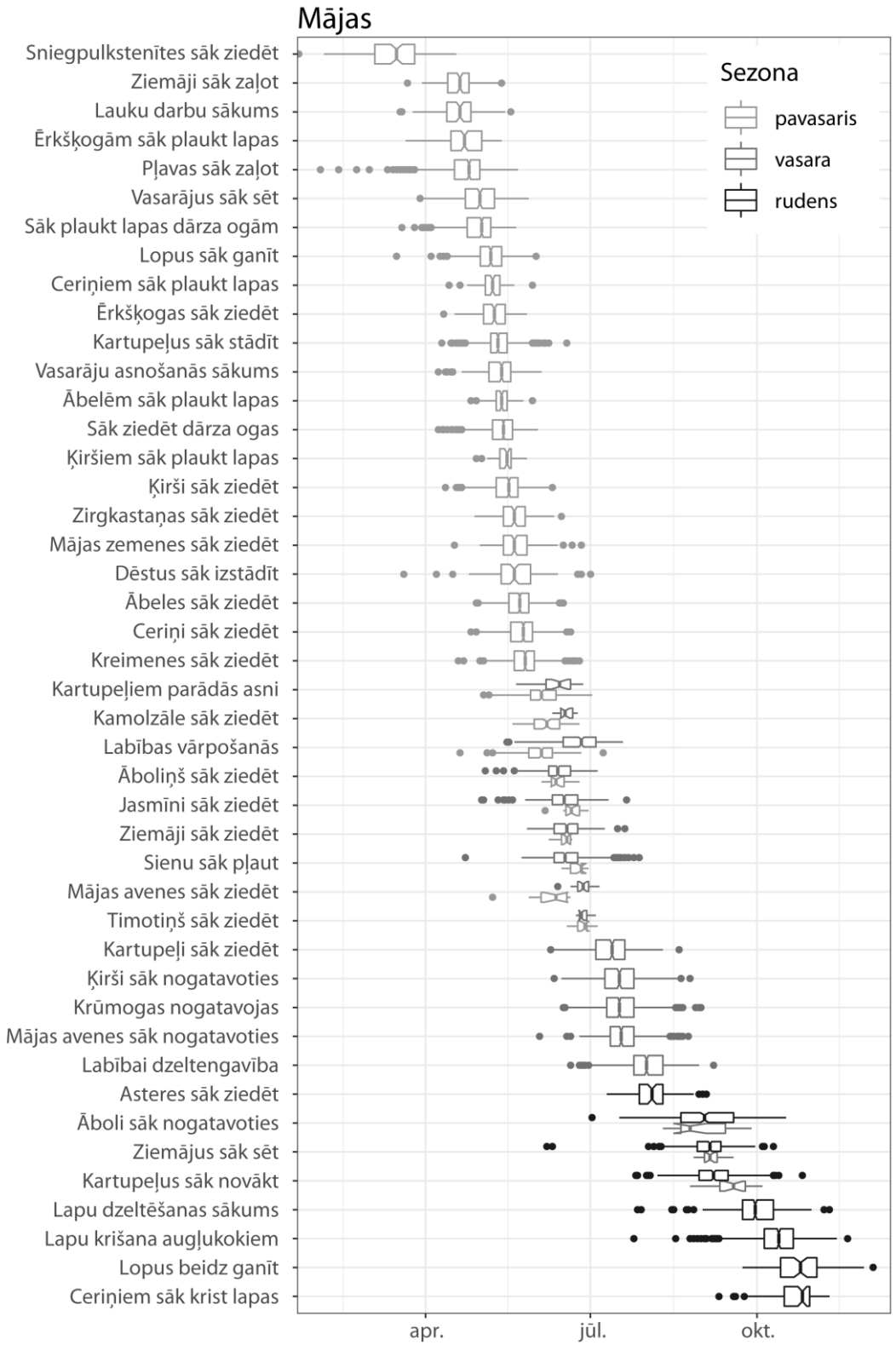
Klimata pārmaiņu rezultātā augu un dzīvnieku fenoloģisko fāžu norises ir mainījušās: pavasara fāzes vidēji iestājas agrāk nekā analizētā perioda sākumā, turklāt agrajām pavasara fāzēm pārmaiņas ir būtiskākas. Rudens fāžu iestāšanās raksturu, visticamāk, ietekmē lokālu faktoru kopa un diennakts garums, jo atsevišķās teritorijās rudens fāzes iestājas agrāk, atsevišķās – vēlāk.



1. attēls. **Latvijas savvaļas sugu fenoloģiskais kalendārs (laika periodā no 1970. līdz 2018. gadam)**

Uz x ass – diena no gada sākuma, uz y-ass fenoloģiskā fāze.

Kastveida diagrammu šķērsojoša līnija norāda fenoloģiskās fāzes visbiežāko iestāšanās vērtību Latvijas teritorijā; kastveida diagramma norāda vērtības, kas reprezentē 50% no vērtībām, t.i., 50% no gadījumiem fenoloģiskā fāze iestājas kastītes izmēra norādītajā diapazonā. Nogriežņi raksturo vērtību izkliedi – ekstremālās agrākās un vēlākās vērtības individuālajos novērojumu punktos.



2. attēls. **Kultūraugu un saimniecisko parādību dabas ritmu hronoloģiskā iestāšanās gaita Latvijas teritorijā laika periodā no 1970. līdz 2018. gadam**

Uz x ass – diena no gada sākuma, uz y-ass fenoloģiskā fāze.

Kastveida diagrammu šķērsojoša līnija norāda fenoloģiskās fāzes visbiežāko iestāšanās vērtību Latvijas teritorijā; kastveida diagramma norāda vērtības, kas reprezentē 50% no vērtībām, t.i., 50% no gadījumiem fenoloģiskā fāze iestājas kastītes izmēra norādītajā diapazonā. Nogriežņi raksturo vērtību izkliedi – ekstremālās agrākās un vēlākās vērtības individuālajos novērojumu punktos.

Secinājumi

Pētījumā veikts brīvprātīgo novērotāju Latvijas teritorijā savākto fenoloģisko datu novērtējums laika periodā no 1970. līdz 2018. gadam.

Datu analīze veikta 148 fenoloģiskajām fāzēm, kas aptver sešas taksonomiskās grupas, piemēram, augi, dzīvnieki, kukaiņi, abinieki, zivis, sēnes, kā arī kultūraugi, atsevišķi nošķirot abiotiskās parādības – pirmais sniegs, pēdējā pavasara salna un saimnieciskās darbības, piemēram, lopu ganīšanas sākums, kartupeļu stādīšana u.c., izveidojot divus dabas ritmu hronoloģiskos kalendārus – savvaļas sugu un kultūraugu (ietverot arī saimniecisko darbību).

Veģetācijas attīstības sākums Latvijā visbiežāk sākas marta vidū, ko iezīmē sniegpulkstenītes ziedēšanas sākums.

Par fenoloģiskā pavasara indikatoru mēdz uzskatīt lazdas ziedēšanu, kas lielākoties notiek paralēli ar baltalkšņa ziedēšanu – ap 1. aprīli (pēdējos gados agrāk – jau martā). Agrie migranti, piemēram, cīruļi, ķīvītes, slokas un strazdi atlido 16.–19. martā.

Masveida lapu plaukšana Latvijā notiek aprīļa beigās–maija sākumā; ziedēšana – maija beigās. Vasaras vidus indikatorsuga – liepa – visbiežāk zied ap 8. jūliju, vienlaikus ar kartupeļiem un pirmo sēņu parādīšanos.

Fenoloģisko rudeni iezīmē lapu krāsošanās sākums septembra vidū, savukārt pabeidz pirmais sniegs, kura iestāšanās vērtības gadu no gada būtiski variē tāpat kā agrā pavasara fāzes.

Fenoloģisko fāžu ikgadējās iestāšanās vērtībām raksturīga liela novirze no noteiktām vidējām vērtībām, agrās fāzes var iestāties pat 4 mēnešu intervālā (piemēram, lazdas ziedēšanas amplitūda ir decembra beigas–maija sākums).

Pateicības

Paldies Ivannai Tokarei par vēsturisko datu digitalizāciju un Andrim Ģērmanim par fenoloģiskā tīkla uzturēšanu un datu apkopošanu.

Pētījums veikts pēcdoktorantūras projekta "Klimata pārmaiņu ietekme uz fitofenoloģiskajām fāzēm un ar to saistītie riski Baltijas reģionā" ietvaros (projekta līguma nr. 1.1.1.2/VIAA/2/18/265).

Summary

Phenological parameters such as blooming, maturity phases and bird migration are among the most visible indicators of climate change. In this study, we carried out a complete evaluation of available phenological data for the territory of Latvia for the period from 1970 to 2018. We examined 148 phenological phases spanning six taxonomic groups – plants, animals, insects, amphibians, fish and mushrooms. Separately we considered crops and abiotic phenomena like the first snowfall, the last spring frost and agricultural activities such as the beginning of livestock grazing, potato planting, etc. As a result, a calendar of natural rhythms was established for the Latvian landscape, indicating the most frequent or most representative

accession time for these phenological phases and the earliest and latest accession values between 1970 and 2018.

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NOVADPĒTNIECĪBA UN ĢEOGRĀFISKĀ IZGLĪTĪBA LATVIJĀ

Local history and geographical education in Latvia

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Ievads

Novadpētniecība Latvijas skolās ir bijusi un ir svarīga mācību darba sastāvdaļa. Arī mūsdienās mācību darbs, kas saistīts ar savas pilsētas, novada izzināšanu un izpēti Latvijas ģeogrāfijas mācību satura pilnveidei, ir daudzveidīgs. Visplašāk to veic Latvijas Ģeogrāfijas biedrība sadarbībā ar novadu pašvaldībām, organizējot seminārus, konferences daudzos Latvijas novados. Šāda sadarbība ir palīdzējusi skolotājiem organizēt mācību stundas un ekskursijas ārpus klases telpām.

Visplašāk darbs savas tuvākās apkārtnes izzināšanā notika pēc 1956. gadā nodibinātās Skolas ģeogrāfijas sekcijas Latvijas Ģeogrāfijas biedrības sastāvā. Padomju laikā daudzi ģeogrāfijas skolotāji organizēja mācību stundas, pārgājienus ārpus klases, veica mērījumus vietējās meteostacijās, pētīja skolai tuvākos dabas objektus. Novadpētniecības darbu ietekmēja vairākas Latvijas administratīvās reformas. Teritoriāli pārmaiņas bija vērojamas skolēnu tuvākās apkārtnes dabas ainavās un saimnieciskajā darbībā, bet dažādas problēmas izpaudās novadu cilvēku dzīvē, izglītībā, kultūrā.

Starptautiskā Ģeogrāfijas Savienība un ģeogrāfiskā izglītība

Latvijas Ģeogrāfijas biedrība (LĢB) kopš tās dibināšanas 1923. gadā ir zinātniska sabiedriska organizācija, kas apvieno ģeogrāfus, cilvēkus, kuri interesējas par dabu un cilvēka ģeogrāfijas pētniecības jomām. Tai nepārtraukti ir bijusi saikne ar ģeogrāfiskās izglītības attīstības veicināšanu gan Latvijas brīvvalsts laikā, gan esot PSRS Ģeogrāfijas biedrības sastāvā. Pēc izstāšanās no PSRS Ģeogrāfijas biedrības un Latvijas neatkarības atgūšanas 1991. gadā līdzās mācību satura reformai Latvijas Ģeogrāfijas biedrības uzdevums bija palīdzēt skolotāju tālākizglītībā, jo mainījās mācību saturs savas valsts, novadu ģeogrāfijā un vēsturē. Pārmaiņas ģeogrāfijas mācību satura izstrādē noteica Starptautiskās Ģeogrāfijas izglītības hartas vadlīnijas.

Starptautiskā Ģeogrāfijas savienība (*International Geographical Union*) 1992. gadā ir izstrādājusi un pieņēmusi Starptautisko Ģeogrāfijas izglītības hartu (*International Charter on Geographical Education*). Tās vadlīnijās uzsvērts, ka ģeogrāfijā nepieciešami labi izglītoti profesionāli skolotāji un ģeogrāfija ir mācāma kā patstāvīgs mācību priekšmets pamatskolā un vidusskolā. Ņemot vērā to, ka ģeogrāfija

ir zināšanas par Zemi kā cilvēka mājokli un cilvēku kā Zemes iemītnieku un apsaimniekotāju. Ģeogrāfija ir telpisks skatījums uz pasauli. Harta pamato ģeogrāfijas nozīmīgo lomu visu cilvēku izglītībā, kas dod iespēju iepazīt fizisko un cilvēka ģeogrāfiju. Tās ļauj iepazīt, salīdzināt un vērtēt teritorijas un procesus dažādos mērogos: lokālā, reģionālā, globālā. Ģeogrāfu uzdevums ir veikt pētījumus, noteikt cilvēku radītu lietu, dabas procesu un parādību izvietojuma daudzveidību uz Zemes. Šo mērogu savstarpējo attiecību izpratne un zināšanu izmantošanas prasme pieder pie svarīgākajām ģeogrāfiskajām kompetencēm. Mūsdienās vairāk kā jebkad agrāk skolotāja uzdevums ir veicināt apgūt patstāvīgas mācīšanās spējas un prasmes, t.i. mācīties izzināt, saprast cilvēka un dabas mijiedarbību globālā un lokālā mērogā (CEG 1992; Krauklis 2001).

2016. gadā Starptautiskā Ģeogrāfijas savienība veic papildinājumus Starptautiskās Ģeogrāfijas izglītības hartas saturā, pievienojot Rīcības plānu. Plāns paredzēts rīcībpolitikas veidotājiem, mācību satura veidotājiem, kā arī ģeogrāfijas mācībspēkiem, lai pilnveidotu ģeogrāfiskās izglītības kvalitāti un veicinātu starptautisko ģeogrāfiskās izglītības pētniecību. Rīcības plāns ietver piecus galvenos uzdevumus:

- Nacionāla un vietēja līmeņa izglītības politikas veidotājiem, kā arī ģeogrāfijas skolotājiem jāpievērš uzmanība un jāveicina ģeogrāfiskās izglītības ieguldījums sabiedrībā, tādējādi nepārprotami veicinot lielāku sabiedrības atbalstu, lai mācību programmās pievērstu lielāku uzmanību ģeogrāfiskā satura nozīmei.

- Nacionāla un vietēja līmeņa izglītības politikas veidotājiem būtu jānosaka obligātās prasības ģeogrāfijas satura mācīšanai, jāpilnveido ģeogrāfiskā pratība tiem, kuri māca ģeogrāfiju.

- Nacionāla un vietēja līmeņa izglītības politikas veidotājiem un ģeogrāfijas skolotāju apvienībām ir jāattīsta starptautiskas un nacionālas mācībspēku apmaiņas programmas, lai dalītos ar noderīgu ģeogrāfijas mācīšanas un mācīšanās praksi.

- Nacionāla un vietēja līmeņa izglītības politikas veidotājiem un ģeogrāfiskās izglītības kopienai jāizstrādā atbilstoša ģeogrāfiskās izglītības pētniecības programma un jāveicina šie pētījumi ģeogrāfiskās izglītības attīstībai.

- Nacionāla un vietēja līmeņa izglītības politikas veidotājiem, ģeogrāfijas skolotāju apvienībām un skolotājiem jāveido un jāuztur spēcīgas un ciešas profesionālās saiknes ar kolēģiem (International Geographic Union 2016).

Novadpētniecība *Latvijas ģeogrāfijas* mācību satura pilnveidē

Padomju okupācijas laikā skolās ģeogrāfijas mācību saturs ļoti maz bija saistīts ar Latvijas valsts, savas tuvākās apkārtnes dabas vides izzināšanu, sava novada, pilsētas, pagasta kultūrvēsturisko daudzveidīgo objektu, cilvēku dzīves, sadzīves izpēti. Mācību programmas tika pakārtotas galvenokārt PSRS ģeogrāfijas saturam visās savienotajās republikās. Latvijā bija teritorijas, dabas objekti, kuriem pat tuvoties nedrīkstējām, jo tās sargāja padomju armijas karavīri. Saldus Novadpētniecības konferences laikā 2016. gadā tika iepazīts Zvārdes pagasts un bijušā PSRS armijas

aviācijas poligona teritorija – bumbu skartie, iznīcinātie kapi un nopostītās Ķērkliņu baznīcas drupas. Šāda situācija padomju laikā bija vērojama arī Igaunijā, Lietuvā un citās Austrumeiropas zemēs.

Pēc padomju armijas aiziešanas no Latvijas ģeogrāfijas skolotājiem pavērās iespēja gan pašiem, gan kopā ar skolēniem izzināt šīs „apsargātās" teritorijas. Problēma bija tā, ka nebija kartogrāfisko materiālu par šīm teritorijām, kas padarīja tās slepenas. Tikai 90. gadu sākumā skolas saņēma mūsdienu objektīvus, kvalitatīvus kartogrāfiskos materiālus (plānus, kartes), ko izstrādāja Karšu izdevniecība *Jāņasēta.*

20. gadsimta 90. gadu sākumā Latvijas ģeogrāfijas skolotājiem radās iespēja piedalīties Vācijas, Polijas, Baltijas, Ziemeļvalstu skolotāju semināros, konferencēs, lai iepazītos ar ģeogrāfisko izglītību, mācību grāmatu saturu un metodiskajiem līdzekļiem. Braunšveigas (Vācija) Mācību grāmatu satura izpētes institūtā skolotāji iepazinās ne tikai ar Eiropas valstu, bet arī citu valstu ģeogrāfijas mācību grāmatu saturu, kurā savas zemes dabas, cilvēku dzīves un saimnieciskās darbības izziņai tika veltīta lielāka uzmanība. Latvijas mācību līdzekļu un grāmatu autori guva ievērojamu pieredzi savu mācību grāmatu izveidei. Regulāri kopīgi tika organizētas mācību metodiskās konferences, lai dalītos pieredzē par mācību stundu, mācību ekskursiju organizēšanu dabā. Mūsdienās šādu darbību dēvē par „Brīvdabas pedagoģiju". Šajā darbā aktīvi iesaistījās un palīdzēja LĢB prezidenti: Guntis Berklavs (1990.-1992.) un Ādolfs Krauklis (1992.-2000.).

Šajā periodā LĢB palīdzēja skolotājiem izstrādāt „Latvijas ģeogrāfijas" mācību programmu, kā konsultanti un autori piedalījās mācību līdzekļu izstrādē.

Skolas ģeogrāfijas sekcijas darbu turpināja vadīt izcilā metodiķe Antoņina Vērdiņa (1929.-1994.), aktīvi strādājot ar skolotājiem un panākot, ka Latvijas ģeogrāfijas mācību programmas saturā tika iekļauta sava rajona un pilsētas ģeogrāfija. Paralēli skolotāji kopā ar skolēniem strādāja pie izziņas (mācību) taku izveides, apsekojot raksturīgākos konkrētajā dzīves vietā esošos dabas vides objektus un teritorijas: iežu atsegumus, gravas, upju ielejas, senlejas, ezerus, savdabīgākās dabas ainavas, kultūrvēsturiskās celtnes. Plašāk iepazina novada etniskās un kultūras tradīcijas. Skolotāji sagatavoja mācību darba lapas, mācību līdzekļus par novadu vai pilsētu. Rīgas 64. vidusskolas ģeogrāfijas skolotāja Veronika Droiska izstrādāja mācību līdzekli „Rīgas ģeogrāfija" (Droiska 1999). Iegūt informatīvo izziņas materiālu palīdzēja Latvijas augstskolās strādājošie ģeogrāfi un vietējo muzeju darbinieki. Metodiskos un mācību materiālus ārpusstundu darbam palīdzēja izstrādāt dabas pētnieks Guntis Eniņš, kopīgi organizējot seminārus dabā.

Viens no dabas taku pamatlicējiem bija Daugavpils Universitātes rektors Bruno Jansons (1932.-2003.), izcils ģeogrāfs, dabas pētnieks, prasmīgs organizators. Viņš vienmēr uzsvēra, ka ģeogrāfiju nevar iemācīties, sēžot tikai klasē, auditorijā, ir arī jāceļo. Tieši B. Jansonu pamatoti var dēvēt par praktiskās ģeogrāfijas un vides izglītības pamatlicēju Latvijā, kurš dalījās pieredzē ar kolēģiem Zviedrijā, ASV. Par to liecina ap 60 zinātniskas un populārzinātniskas publikācijas, izstrādāts promocijas

darbs "Skolotāju sagatavošana novadpētniecības darba organizēšanai skolā", iegūstot pedagoģijas doktora zinātnisko grādu. B. Jansona lielais mūža devums ir Pilskalnes Siguldiņas, Markovas, Adamovas takas un Egļu kalna izziņas takas izveide. 1979. gadā viņš vadīja projektu "Daugavpils rajona dižkoku uzskaite" B. Jansons ir veicis arī citu dabas objektu izpēti, piemēram, 1988. gadā Latvijā lielākā – Nīcgales –akmens uzmērīšanu.

Laika posmā no 1992. gada līdz mūsdienām ar Latvijas Ģeogrāfijas biedrības atbalstu ik vasaru ir notikuši semināri, konferences dažādos Latvijas novados un pilsētās: Daugavpilī, Valmierā, Liepājā, Ventspilī, Ērgļos, Alūksnē, Bauskā, Krāslavā, Rēzeknē, Smiltenē, Jēkabpilī, Talsos, Saldū, Valkā, Tukumā, Limbažos, Ziemeļkurzemē, Sēlijā, Preiļos, Aglonā, Valkā, Kuldīgā.

Šajās 1–2 dienu ģeogrāfu konferencēs katru gadu ir piedalījušies 43–68 dalībnieki – ne tikai skolotāji no visiem tuvākiem un tālākiem novadiem, bet arī skolēni, studenti, vietējo novadu pašvaldību vadītāji, novadpētniecības muzeju, bibliotēku vadītāji. Bez novadu atbalsta šādi pasākumi nebūtu tik bagāti, daudzveidīgi, informatīvi un interesanti. Galvenais šo konferenču ieguvums – pamatīgāk iepazīti dažādi Latvijas novadi, pilsētas, cilvēki, kuri ir kompetenti sava novada kultūras mantojuma un vērtību pētnieki: Mirdza Zommere Vecpiebalgā, Anna Kuzina Ērgļos, Malvīne Loce Ludzā, Mirdza Briede Valkā, Sandra Pilskalne Kārķos, Valentīna Ukre Jēkabpilī, Vija Moisejeva Jūrmalā, Ināra Riekstiņa Ventspilī, Elita Sproģe Saldus vēstures un mākslas muzejā, Tukuma, R. Blaumaņa muzeja darbinieki. Šo cilvēku līdzdalība padarīja interesantāku un izziņas bagātāku konferences saturu.

Novadpētniecības izbraukuma konferenču darba programma tiek izstrādāta atbilstoši mācību programmas „Novadpētniecība" mērķiem un uzdevumiem:

1. Paplašināt zināšanas par Latvijas novadu dabas daudzveidību, cilvēku dzīvi un novada kultūrvidi.
2. Mācīties izprast dabas vides un sabiedrības mijiedarbību, piederību un devumu vietējās kopienas attīstībā vienotā Latvijā.
3. Mācīties organizēt pārgājienus, mācību ekskursijas, mācību stundas laukā – tuvāk vai tālāk no skolas, lai vērotu, pētītu, vērtētu un izzinātu apkārtējā vidē notiekošos procesus un parādības.

Arī 2020. gada augustā Kuldīgā izziņas praktiskās konferences darba programmas saturs galvenokārt tika saistīts ar novada, pilsētas dabas vides procesu, kultūrvēsturisko objektu izpēti brīvā dabā, to papildinot ar mācību ekskursiju. Darba programmas realizācija brīvā dabā bija kvalitatīvi saistoša, jo tika iekļauti izziņai un diskusijām pateicīgi dabas objekti. Darba programmas saturs tika veidots un saskaņots ar novada pašvaldību, izglītības iestādi un ģeogrāfijas skolotājiem.

Iespējams iepazīties ar 2020. gadā Valkā notikušās reģionālās konferences programmu:

PEDAGOGU PROFESIONĀLĀS KOMPETENCES PILNVEIDES A PROGRAMMA

Programmas nosaukums: *Novadpētniecība – sava novada, pilsētas izzināšana un izpēte Latvijas ģeogrāfijas satura un skolēnu pētnieciskās darbības pilnveidei* Vispārējā vidējā izglītībā.

Programmas veids: A programma.

1. Izglītības satura un didaktikas modulis; Mācību stratēģijas un metožu izvēle.

2. Pedagoga pieredzes modulis; Radošas pedagoģiskās darbības veicināšana dalībai praktiskajās nodarbībās, mācību metodisko materiālu sagatavošanai, radošas pedagoģiskās darbības veicināšanai, īstenojot pedagoģisko procesu atbilstoši katra skolēna individuālajai attīstībai.

Programmas mērķauditorija: ģeogrāfijas, dabas zinību, sociālo zinību pedagogi.

Programmas mērķi:

- Pilnveidot pedagogu zināšanas par sava novada, pilsētas dabas, kultūrvēsturisko objektu un teritoriju izpēti un skolēnu pētniecisko darbību.
- Sekmēt netradicionālu mācību darba organizāciju ārpus klases telpām un daudzveidīgu mācību paņēmienu izmantošanu: mācību stunda dabā, muzejā, uzņēmumā/ražotnē.

Plānotie rezultāti:

- Pedagogi papildina zināšanas par Kuldīgas novada dabas vides daudzveidību, cilvēku dzīves vidi, saimnieciskās darbības, uzņēmējdarbības attīstību.
- Pedagogi dalās pieredzē, kā organizēt mācību stundas ārpus klases telpām, mācību ekskursijas, sadarbojoties ar vietējo pašvaldību.
- Pedagogi iepazīstas ar mācību programmas *Novadpētniecība (Novadmācība*) mērķiem, uzdevumiem, mācību saturu un mācību materiāliem Kuldīgas novada izglītības iestādēs.

Sadarbības partneri: LU Ģeogrāfijas un Zemes zinātņu fakultāte, Latvijas Ģeogrāfijas biedrība, Kuldīgas novada Dome,

Programmas īstenošanas veids: Konference (lekcijas, praktiskās nodarbības, mācību ekskursija).

Laiks: 2020. gada 20.-21. augusts.

Norises vieta: Kuldīgas Jauniešu māja, Jelgavas iela 26, Kuldīga, Kuldīgas novads.

Ceturtdiena, 20. augusts

Laiks	*Saturs*
10.00 – 10.30	Dalībnieku reģistrācija. Kuldīgas Jauniešu māja Jelgavas iela 26, Kuldīga.
10.30 – 11.00	Konferences atklāšana (Kuldīgas novada Domes vadītāja Inga Bērziņa).
11.00 – 11.30	Interaktīvās kartes un ArcGIS iespējas ģeogrāfijas mācību satura apguvei (Raivis Jasinskis).

Laiks	***Saturs***
11.30-12.00	*Novadmācība* - novada vēstures un ģeogrāfijas satura apguvei (Gunita Meiere, Santa Zeidaka).
12.00 – 12.30	pauze
12.30 – 13.00	Pētniecisko metožu un instrumentu izmantošana mācību satura apguvē (asoc.prof. Iveta Šteinberga).
13.00 – 13.00	Kurzemes mežu resursu, ainavu ģeogrāfija (prof. Māris Laiviņš).
13.30 – 14.00	Demogrāfiskie un migrācijas izaicinājumi Latvijas reģionos, (prof. Zaiga Krišjāne, Elīna Apsīte-Beriņa).
14.00 – 15.00	Pusdienu pauze
Ārpusklases mācību nodarbības – mērķtiecīgai apkārtējās vides iepazīšanai un izpētei	
15.00 –16.30	Atraktīvas, izzinošas un intelektuālas nodarbības pilsētvidē. Tikšanās Restaurācijas darbnīcā.
16.30–18.00	Pilsētas ģeogrāfija kopā ar novada Domes priekšsēdētāju Ingu Bērziņu un Kuldīgas attīstības aģentūras vadītājas vietnieku Kasparu Rasu.
18.00–20.00	Individuālie uzdevumi Kuldīgas pilsētā, vakariņas.
20.00	Rezultātu apspriešana un diskusijas Kuldīgas Jauniešu mājas pagalmā

Naktsmītne – Kuldīgas novada Sporta skolas kopmītnes Virkas ielā 13.

Piektdiena, 21. augusts

9.00 – Mācību ekskursija, izbraukšana no Kuldīgas Pilsētas laukuma. Mācību ekskursijas vadītājs: LU ĢZZ fakultātes asoc. prof. Ivars Strautnieks.

Darba programma:

Kuldīgas novada dabas objektu, kultūrvēsturisko teritoriju izzināšana:

- Ventas upes baseina izpēte:
  Ātrās dabas klintis pie Lēnām.
  Lēģernieku krauja pie Lētīža.
- Embūte, Krievu (Krīvu) kalns.
- Valāpes pilskalns.
- Kurzemes apdzīvotība: Kazdanga (Pils un muižas parka dabas takas izpēte).
- Aizpute – pilsēta R-Kursas augstienē pie Tebras upes.

Programma izstrādāta atbilstoši MK noteikumiem 2018. g. 11. 09., 19. un 21.1. p. *Noteikumi par pedagogiem nepieciešamo izglītību un profesionālo kvalifikāciju un pedagogu profesionālās kompetences pilnveides kārtību.*

Programma saskaņota ar Kuldīgas novada Domi.

Programmas izstrādātāji un īstenotāji:

LU Ģeogrāfijas un Zemes zinātņu fakultāte *prof. Zaiga Krišjāne*

LU LĢB prezidents *asoc. prof. Ivars Strautnieks*

Konferenču satura tematiku palīdzējuši izstrādāt un ekskursijas ir vadījuši LU Ģeogrāfijas un Zemes Zinātņu fakultātes docētāji: asoc. prof. Ivars Strautnieks, prof. Ojārs Āboltiņš, prof. Zaiga Krišjāne, prof. Māris Laiviņš, asoc. prof. Pēteris Šķiņķis, doc. Ineta Grīne, vadošā pētniece Elīna Apsīte-Beriņa, Daugavpils Universitātes doc. Juris Soms, Rēzeknes Tehnoloģiju augstskolas lektors Ivars Matisovs, kuri konferenču darba saturu ir papildinājuši ar pētnieciskajā darbā iegūtām atziņām par Latviju un Latvijas novadiem.

Noslēgums

Latvijas Ģeogrāfijas biedrība laika posmā no 1992. gada sadarbībā ar novadu pašvaldībām ir veikusi ievērojamu darbu skolotāju un skolēnu Latvijas ģeogrāfiskajā izglītībā. Kopumā pēc šādiem semināriem, konferencēm skolotāji ir zinošāki, tāpēc viņu vadītās mācību nodarbības Latvijas dabas un iedzīvotāju ģeogrāfijā skolēniem kļūst saistošākas un interesantākas. Daudzās Latvijas skolās fakultatīvi notiek mācību darbs novadpētniecībā. Ģeogrāfiska satura informācija veicina tūrisma attīstību, un skolēni kļūst par ekskursiju vadītājiem. Laika gaitā ģeogrāfi, ģeogrāfijas skolotāji ir apceļojuši Latviju, sākot no pierobežas Baltkrievijā, Lietuvā, Igaunijā, krustu šķērsu pāri dažādiem novadiem līdz Baltijas jūras, Rīgas līča krastam.

Summary

Since its establishment in 1923, the Latvian Geographical Society (LGB) has been a non-governmental organisation that brings together geographers and people who are interested in research into nature and human geography. Local history and geography has always been an integral part of the teaching process. Today, the knowledge held by members of the society and the research-based educational work carried out by the society about different cities and regions for the improvement of the study content of Latvian geography is diverse. The Latvian Geographical Society cooperates most extensively with local government, organising seminars and conferences in Latvia at the regional level. This cooperation has helped teachers to schedule lessons and excursions outside the classroom.

Izmantotā literatūra

CGE I. (1992). International charter on geographical education. *International Geographical Union, Commission on Geographical Education*.

Droiska, V. (1999). *Rīgas ģeogrāfija.* Rīga: Apgāds «Mācību grāmata».

International Geographic Union – Commission on Geographical Education (2016). *International Charter on Geographical Education*. http://www.igu-cge.org/2016-charter (16.01.2020).

Krauklis, Ā. (2000). Living with Diversity in Latvia: People, Nature and Cultural Landscapes. *Ģeogrāfiski Raksti / Folia Geographica*, VIII, 1-14.

Lagzdiņa, Ē. un Skangale. I. (2003). *Ieteikumi dabas taku veidotājiem*. Regionālais vides centrs, 5-32.

Latvijas Ģeogrāfijas biedrība (Bez dat.) Konferenču „Novadpētniecība - sava novada, pilsētas izzināšana un izpēte Latvijas ģeogrāfijas satura un skolēnu pētnieciskās darbības pilnveidei" materiāli laika posmā no 1992. - 2019. gadam. Nepublicētie materiāli.

Pūriņš, V. (1982). *Latvijas PSR Ģeografijas biedrība. 1950.-1980*. Rīga: Avots, 45-51.

INSTRUCTIONS FOR AUTHORS

NORĀDES AUTORIEM

Ģeogrāfiski Raksti / Folia Geographica publishes original papers contributing to general and applied geography. Research reports, new trends, ideas and generalizations as well as efforts to integration of research, education and everyday geography in Latvia's and the world context are expected contributions. All manuscripts are reviewed by the editor and two external reviewers.

Manuscripts must be submitted in an electronic format and sent to email: lgb@inbox.lv. The text should be typed with standard-size letters (12 points) on paper of A4 format, with 1 ½ spacing and margins at least 2.5 cm.

Recommended length is from **6 to 8 pages**. The manuscript should include: (1) title (as short as possible, precise and well understandable), (2) author(s) name(s), institution, e-mail addresses, (3) abstract (up to 200 words) and key words, (4) main text (in a conventional research paper – introduction, materials and methods, results, discussion and conclusions, acknowledgements), (5) references, (6) summary (up to 200 words in Latvian). The submission of a manuscript does imply that this paper has not been published elsewhere.

The pages should be numbered throughout, including tables and legends to figures. References to published materials, when cited in the text, must be written as follows: (Gregory 2000; Rutkis (ed.) 1967; Rediscovering Geography Committee 1997). In the list at the end of the manuscript they should be arranged in alphabetical order. Names of journals and separate books should be written in *italics.* In case web page use, the address should be noted in the reference list (by specifying the date when it was accessed).

Ģeogrāfiski Raksti / Folia Geographica publicē oriģinālus rakstus vispārīgās un lietišķās ģeogrāfijas jomā. Gaidīti ir pētījumi, jaunas ievirzes, idejas un vispārinājumi, kā arī darbi par pētniecības, izglītības un ikdienas ģeogrāfijas integrācijas problēmām Latvijā un citviet pasaulē. Visus saņemtos manuskriptus izskata redaktors un divi neatkarīgi recenzenti.

Manuskripti iesniedzami elektroniskā formā sūtot uz epastu: lgb@inbox.lv. Teksts rakstāms ar 1 ½ intervālu *Times New Roman* (12) lieluma burtiem uz A4 formāta lapām, atstājot 2.5 cm platas piemales. Raksta lappusēm jābūt numurētām.

Raksta apjoms no **6 - 8 lapaspusēm angļu valodā**. Rakstam tiek pievienota anotācija (nepārsniedzot 200 vārdus) un kopsavilkums latviešu valoda (nepārsniedzot 200 vārdus), un **atslēgas vārdi (līdz 5).**

Manuskripta ieteicamā struktūra: (1) virsraksts (iespējami īss, precīzs un labi saprotams), (2) autora(u) vārds(i) un uzvārds(i), darba vieta, e-pasta adrese (3) anotācija (nepārsniedzot 200 vārdus) un atslēgvārdi (līdz 5), (4) pamatteksts (parasti - ievads, materiāls un metodes, rezultāti, to interpretācija un secinājumi, atzinības apliecinājumi), (5) atsauces (literatūras saraksts), (6) kopsavilkums latviešu valodā. Iesniedzami tikai tie manuskripti, kas nav publicēti citā izdevumā.

Tekstā atsauces uz literatūras avotiem norādāmas šādi: (Gregory 2000; Rutkis (ed.) 1967; Rediscovering Geography Committee 1997). Literatūras sarakstā raksta beigās visi tekstā minētie darbi jāsakārto alfabētiskā secībā. Žurnālu un atsevišķu grāmatu nosaukumi jāraksta slīprakstā. Ja izmantots interneta resurss, jābūt norādei uz tīmekļa vietnes adresi (minot datumu, kad tas aplūkots).

Examples / piemēri:

Dansereau, P. (1966). Ecological impact and human ecology. Darling, F.F. and Milton, J.P. (eds.) *Future Environment of North America.* New York: Natural History Press Garden City, 425-462.

Gregory, K. (2000). *The Changing Nature of Physical Geography*. London: Arnold.

Latvijas zeme, daba, tauta, I-III, (1936-1937). Rīga: Valters un Rapa.

Lewis, M.W**.** (2000). Global ignorance. *The Geographical Review,* 90 (40), 603-628.

Rediscovering Geography Committee (1997). *Rediscovering Geography. New Relevance for Science and Society.* Washington DC: National Academy Press.

Rutkis, J. (ed.) (1967). *Latvia: Country and People.* Stockholm: Latvian National Foundation.

Centrālā statistikas pārvalde. Galvenie statistikas rādītāji 2015.gadā: http://www.csb.gov.lv/sites/default/files/publikacijas/2015/nr_03_Latvija_2015_galvenie_statistikas_raditaji_1500.pdf (18.01.2016)