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**"Global Challenges and Prospects of the Modern Economic Development"****VIRTUAL URBAN COMMUNITIES AS AN ACTOR OF  
CIRCULAR ECONOMY DEVELOPMENT IN RUSSIA**

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*Abstract*

The article analyzes the activity of virtual urban communities that have spread in the last few years in Russia. The author considers their activity as an innovative non-institutionalized form of social activity, complementing the weak environmental non-profit movement. Based on the study of the virtual socio-ecological landscape of 14 biggest Russian cities, the author concludes about the main activities of virtual urban communities, determines the nature of circular practices carried out and supported by such virtual groups. Based on the research of 74 virtual urban communities, the article identifies the dominant themes in the field of individual implementation of circular practices, as well as in the field of joint activities of groups. The focus of attention of participants of virtual urban communities to the experience of activities in the field of household waste management in Russia and abroad is also studied, the attitude to various practices of the circular economy is determined. The study identified the actors with whom virtual urban communities interact, determined the attitude of the participants of these groups to the authorities and participation in political activities. The article also describes the geographical deterministic differences in the virtual socio-ecological landscape of large cities, which depends both on the population, on its socio-cultural characteristics, as well as on the intensity of the situation in the field of municipal waste management.

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## 1. Introduction

Recently, the concept of CE has become very popular in developed countries both as a topic for theoretical disputes and at the level of political and practical solutions. The results of the implementation of the CE development plan adopted in Europe in 2015 are critically analyzed annually by a wide range of stakeholders. However, even theoretically, the concept of circular economy does not look unambiguous today. Some review articles (Kirchherr, Reike, & Hekkert, 2017; Kalmykova, Sadagopan, & Rosado, 2017) point to the inconsistency and incompleteness of the definitions that guide both politicians and entrepreneurs, trying to implement the principles of circular economy in various spheres of life. Despite the fact that the concept of CE claims to replace the theory of sustainable development, according to some authors, it does not pay enough attention to the social aspects of the transformation of the economic structure of society, focusing more on industrial processes (Korhonen, Nuur, Feldmann, & Birkie, 2015). This is because the urban environment is a much more complex system for implementing circular economy principles than a factory or even an eco-industrial Park (Williams, 2019). The city, being a more complex and multi-factor system, can generate much greater diversity in circular solutions at the grassroots level (Seyfang & Longhurst, 2015). These can be solutions related to everyday life (Hobson, 2019), with a special ethical approach to consumer choice (Rizos et al., 2016), a large range of solutions related to sharing practices (Daunorienė, Drakšaitė, Snieška, & Valodkienė, 2015).

All these solutions allow us to move from a fairly simple and primitive idea of waste management at the level of their collection and recycling to the implementation of the idea of waste prevention. The idea of recycling was once progressive, but today it is clear that it is far from a panacea and although it is economically beneficial, it also generates a number of environmental and social problems (Bartl, 2014). It should be noted here that in Russia, state policy at the moment is mainly aimed at the implementation of the lowest methods of waste management – more thorough collection of waste to prevent their placement in nature, more thorough isolation at landfills and incineration of mixed waste (Nikitina, 2019, Kudryavtseva et al., 2018). With this approach on the part of the state, civil society initiatives on separate collection of waste for further recycling look very progressive. However, it is impossible to implement even this primitive level without appropriate infrastructure, since any initiatives for more rational use of resources - both recycling and sharing practices-can be quite effective only if infrastructure is available (Hult & Bradley, 2017). Of course, some environmentally friendly practices can be carried out by a person alone, but even an informed environmentally friendly product choice needs some information and coordination support. This choice is easier to make after discussing the details with like-minded people, it gives confidence and determination. Therefore, support from the community, even if virtual, is very important in matters of ethical consumption. Much more important is the presence of not just a virtual, but really neighbourly, local community for the implementation of any actions, such as free markets and sharing practices, recycling activities (Rufas & Hine, 2018). Virtual urban communities are trying to cope with such tasks in modern Russia, the number of which in social networks has been constantly increasing in the last few years, which makes the study of their functioning important and interesting. Urban virtual communities are variously involved in circular practices (Nikitina, Korsun, Sarbaeva, & Zvonovsky, 2020), but of particular interest are those that were created specifically to optimize waste management in their city.

## **2. Problem Statement**

In the conditions of the crisis in the field of waste management in modern Russia, when the state does not carry out serious activities in the direction of developing a circular economy (Nikitina, 2017), civil society represented by non-profit organizations works on this problem most insistently. At the same time, there is an uninstitutionalized movement appeared recently on a base of virtual platform as a self-organized online local communities. In this regard, it is important to conclude how these virtual organizations replace or complete the movement of Russian environmental non-profit organizations weakened by repressive Russian legislation. Under these conditions, it is important to determine the degree of readiness of virtual urban communities (hereinafter referred to as VUC) to mobilize the resources of citizens for the development of the circular economy “from below”, to identify those spots where VUCs are developing success and in which areas their activities are not realized yet.

## **3. Research Questions**

In accordance with the problem posed, the following key questions arise: 1) What does the virtual socio-ecological landscape of a large modern Russian city look like, what virtual city groups stand out in numbers and activity; 2) What ideas and practices of the circular economy are becoming the focus of attention and an occasion for the emergence and development of urban communities in modern Russia; 3) What are the positive and negative experiences in implementing circular practices that VUC participants explain; 4) Which of the levels of circularity is most actively supported in the virtual communities of large Russian cities; 5) What virtual and real city actors interact with the VUC, what is the role of business and government at various levels in the representations of members of virtual urban communities.

## **4. Purpose of the Study**

The purpose of the study to identify different types of VUC-es in a modern large Russian city, their roles in the development of CE in Russia, to identify their potential and development prospects. Another goal is to describe the virtual socio-ecological landscape of a large modern Russian city, by which we mean the totality of different types of virtual communities in the VKontakte social network: from autochthonous groups to departments of all-Russian social movements, from pages of educational institutions to commercial and political communities. At the end, it was planned to study the frequency of references to various CE practices implemented by members of VUC at the institutional and individual level, as well as their assessment of the situation in the CE development in Russia and in foreign countries.

## **5. Research Methods**

The empirical basis of the study. To study the problem posed, we took VUC, existing on the most popular Russian-language social network Vkontakte, in conjunction with large Russian cities exceeding 1 million people, including Moscow, St. Petersburg, Novosibirsk, Yekaterinburg, Nizhny Novgorod,

Kazan, Chelyabinsk, Omsk, Samara, Rostov-on-Don, Ufa, Krasnoyarsk, Voronezh, Perm, Volgograd – in a total of 14 cities.

In connection with each city (which allows the built-in option on the Vkontakte network), a search was made for communities in the contact by the keywords “waste”, “zero waste”, “garbage”, “eco”, “recyclable materials”, “ecologist”. The data set of words is predetermined by the most popular concepts, public organizations and movements.

As a result, a list of communities was obtained in each region, from which irrelevant groups, groups with less than 300 subscribers, and inactive communities were eliminated. The groups were examined by the number of subscribers, the partners, fixed in the right panel in the “links” section, were studied. Next, the content of the communication that took place in the group, which included posts on the wall and comments, was investigated. Arrays for analysis were formed by extracting 20 messages in each group, starting from the 1st day of each average month in the season.

The created text array was studied and divided into 5 semantic sections: Section 1 - description of VUC activities, which were encoded as positive and negative; Section 2 - reports on personal experience in the field of the circular economy, which were encoded as positively assessed, neutral and negative; Section 3 - reports on experience in the development of the circular economy in Russia (also positive and negative); Section 4 - similar experience abroad (also positive and negative assessment); Section 5 - proposals and wishes for the future, which were encoded according to the criterion for classifying them as different entities (themselves, other people, government, business). The content of all sections was described in terms of acting subjects, events and evaluated according to the criterion of classifying one or another stage of the circular economy.

An analysis was also made of the mention of authorities at various levels, regional waste management operators, as well as business in the generated texts arrays.

## **6. Findings**

As a result of investigation 74 VUK with number of subscribers from 376 to 47 472 people were revealed. The average population of the community was 940. More than half of the VUK (namely 43 out of 74) were geographically tied to Moscow and St. Petersburg, which corresponds to the proportion of the population living there. These VUK are the most active and numerous, it is 1271 people, and in other cities with a population of over a million people, the average number of VUK is only 482 people. Thus, in Moscow and St. Petersburg not only the number of VUK more, but they are more numerous. If we sum up the total number of subscribers and correlate it with the population in the capital cities, it will be about 0.32%, and if we calculate the share of subscribers in other cities with a population of over a million people in the total population, it will be clearly less and will be 0.12%. It's obvious, that a number of restrictions should be taken into account, which can underestimate or exaggerate this figure. Firstly, there is the problem of double counting, as subscribers of one community can be subscribed to another, which is included in the number of studied groups. Secondly, in our study, not all virtual communities were covered, today there are other platforms such as Facebook, Odnoklassniki, Viber, WhatsApp and others. Thirdly, many people involved in the problem of MSW are not members of the VUC, but make a big contribution to solving the problem. Nevertheless, the order of numbers should be taken into account,

understanding that the proportion of the population involved in even the simplest circular practices in the field of optimizing waste management in modern Russia is small, and it falls when the observation moves from the center of the country to the periphery.

Describing the virtual socio-ecological landscape of a large modern Russian city, we point out that in every city there are autochthonous groups, as well as branches of all-Russian social movements, such as “There is no more garbage,” “Separate collection”, as a rule, these latter are less in number than local ones. A separate category is university virtual communities, however, they are not found in every city, but in cities – university centers.

Most VUCs are virtual associations without a legal entity and are described accordingly as an association of people of interest, without membership, without contributions and obligations. It should also be noted that when searching for groups relevant to our request, there were some groups created by commercial companies, which also played the role of coordinator of circular economy practices in some cases, as well as distributing interesting and important information materials in all formats - in the form of text, video and posters. In most cases, we did not consider such communities as VUC, but sometimes they were such in essence.

Next, we consider the content of communication in these groups on the selected thematic sections in terms of attention to different levels of circular economy practices. Among the thematic sections, which we identified as the base frame, the largest was the section devoted to the activities of the urban virtual groups themselves, which included almost a third of all messages (32%). In second place in terms of the number of messages (28%) was the thematic section on the individual activities of VUC subscribers. The thematic section "Waste Management and the Circular Economy in Russia" included 16% of the posts, and the section "Waste Management and the Circular Economy Abroad" - 13%. The remaining 11% of the encoded posts were in the "Suggestions and Wishes" section.

As for the first section, it turned out mainly the reports of group administrators on past events, covering the most often in a positive manner, although they also indicated problems and difficulties. In this section references to partnerships with business organizations, especially those who collect recyclables, were often found; information on business sponsors of events was highlighted. Another type of appointed actors here is educational institutions - schools and universities, which very often join the activities organized by the group. It should be noted that in this section there is a mention of support for initiatives from the city administration; however, such references are very rare. The vast majority of posts in this section are positive in color, and only 17% of posts are negative. Most often, dissatisfaction is associated with insufficient support from the population, with a low level of its environmental culture, corrupt practices and poor logistics from business companies.

As for the level of circularity, this section most often deals with the organization of actions for the separate collection of raw materials (42%), about community workdays and field trips for garbage collection (25%). Less common is information on eco-educational activities (16%), on free markets (11%), and information on activities for creative processing of potential waste (6%) is in last place.

In the section on the individual activities of subscribers, members of the VUC share information on their own successes or failures in the circular economy. The bigger part of information here is related to questions about how and what can be collected separately, where and when it can be taken (49%), most

messages have a neutral intonations. About 32% of posts are information about their own experience in the circular economy, while there are almost the same number of positive and negative reviews. Also, most of the messages here are related to the separate collection of garbage, reducing the volume of its formation. In 8% of the records on the walls of communities, you can find useful material about the creative use of waste and unused items, about ways to reuse things, quite rarely there are reports on practices of a sharing economy. And there is a lot of information about places where you can perform yourself as an awarned consumer.

The situation in the section on experience in the field of waste management in Russia looks different. Here, most of the messages are negative, the authors of the messages pay attention to the poor organization of garbage collection in general, especially separate waste collection. In that section we can see an information on the problems of storage of separately collected waste and the subsequent fate of separately collected waste. Among the posts there are many negative references regarding landfills and incineration, some negative reports about regional waste management operators. Participants also suggested to organize a public control groups. However no discussion about more progressive techniques for waste reduction or prevention was found in that section.

The posts on the situation in the field of waste management and the circular economy abroad are colored in the opposite way. In that section, the majority of the materials are positive, cited as an example European and Asian countries with established separate collection of recyclables, with the replacement of plastic with other materials in everyday life, community members give many examples of progressive changes in business. Many interesting and creative circular innovations in a casual life of people and communities are mentioned in that section. At the same time, more than a quarter of the reports are negative, especially concerning waste management system in the United States.

The last section contains the proposals of subscribers, which they formulate addressing to various social actors. Basically, subscribers offer local authorities to resolve issues with garbage collection (25%), suggest to the national and regional Government to enhance environmental education in schools and universities (18%), the authorities are offered to deal with the organization of work of waste recycling enterprises, their creation or reorganization (12%), as well as suggestions for the development of legislative basis for stimulating environmentally friendly consumption and production of environmentally friendly goods, supporting non-waste production (6%). Subscribers also offer other people to participate in eco-workdays, to organize separate collection of different garbage fractions at their own householding and at the condominium; to optimize personal consumption, to lead a more awarned lifestyle (13%, 12%, 8% and 6%, respectively).

## **7. Conclusion**

VUCs are a diffuse phenomenon that does not have centralized management and the sources of formation. This phenomena is a manifestation of the growing level of environmental awareness and civic responsibility of modern Russian citizens. VUCs are to some extent a substitute for public environmental organizations in modern Russia which have wider base in local population then it was in 90-es.

They took on a coordinating role in such areas of circular economy as the development of separate waste collection, but there is no significant attention to the practices of a circular economy of a higher

level, which helps prevent the appearance of waste in these groups. There is no political activity in these groups, since there are practically no claims to participate in policy-making process in the waste management sphere neither on municipal nor on regional or federal level. In fact, this movement is a grassroots activity, which is trying by any means adapting to the existing reality to introduce practices of the circular economy in defiance of a conservative state policy. We can consider this activity as a special form of “living lab”, where are different prototypes of successful circular economy practices passing through tests. But these VUC act in an apolitical space so there is a big gap between VUCs activities and administrative plans in a waste management field. Another problem is that the amount of supporters of circular economy ideas is too small in modern Russian cities, which definitely breaking down the movement toward a circular economy development in Russia.

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## References

- Bartl, A. (2014). Moving from recycling to waste prevention: A review of barriers and enablers. *Waste Management & Research*, 32(9), 3-18. <https://doi.org/10.1177/0734242X14541986>.
- Daunorienė, A., Drakšaitė, A., Snieška, V., & Valodkienė, G. (2015). Evaluating sustainability of sharing economy business models. *Procedia – Social and Behavioral Sciences*, 213, 836-841. <https://doi.org/10.1016/j.sbspro.2015.11.486>.
- Hobson, K. (2019). ‘Small stories of closing loops’: Social circularity and the everyday circular economy *Climatic Change*, 1-18. <https://doi.org/10.1007/s10584-019-02480-z>
- Hult, A., & Bradley, K. (2017). Planning for sharing – Providing infrastructure for citizens to be makers and sharers. *Planning Theory & Practice*, 18(4), 597-615. <https://doi.org/10.1080/14649357.2017.1321776>.
- Kalmykova, Y., Sadagopan, M., & Rosado, L. (2017). Circular economy – From review of theories and practices to development of implementation tools. *Resources, Conservation and Recycling*, 135, 190-201. <https://doi.org/10.1016/j.resconrec.2017.10.034>
- Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, 127, 221-232 <https://doi.org/10.1016/j.resconrec.2017.09.005>
- Korhonen, J., Nuur, C., Feldmann, A., & Birkie, S. E. (2015). Circular economy as an essentially contested concept. *Journal of Cleaner Production*, 175(20), 544-552. <https://doi.org/10.1016/j.jclepro.2017.12.111>
- Kudryavtseva, O., Solodova, M., Korenevskaya, D., Kutubaeva, R., Tishkova, A., & Shchevyeva, L. (2018). Perspectives of the solid waste management in Moscow. *Scientific Research of Faculty of Economics. Electronic Journal*, 10(2), 64-87. [in Rus.].
- Nikitina, B. (2017). The role of the population in the organization of municipal waste treatment: Comparative analysis. Russian and European trends. *Telescope*, 6(126), 34-40. [in Rus.].
- Nikitina, B., Korsun, M., Sarbaeva, I., & Zvonovsky, V. (2020). Development of the practice of sharing economy in the communicative information environment of modern urban communities. In S. Ashmarina, A. Mesquita, & M. Vochozka (Eds.), *Digital Transformation of the Economy:*

- Challenges, Trends and New Opportunities. Advances in Intelligent Systems and Computing*, 908 (pp. 376-394). Springer: Cham. [https://doi.org/10.1007/978-3-030-11367-4\\_37](https://doi.org/10.1007/978-3-030-11367-4_37)
- Nikitina, B. A. (2019). “Zimnyaya Vishnya” and the “Yardovo” landfill as two sides of the same coin: Difficulties in comprehending the obvious. *Bulletin of the Institute of Sociology*, 10(1), 28-57. <https://doi.org/10.19181/vis.2019.28.1.555> [in Rus.].
- Rizos, V., Behrens, A., Van Der Gaast, W., Hofman, E., Ioannou, A., Kafyeke, T., ... & Topi, C. (2016). Implementation of circular economy business models by small and medium-sized enterprises (SMEs): Barriers and enablers. *Sustainability*, 8(11), 1212. <https://doi.org/10.3390/su8111212>
- Rufas, A., & Hine, C. (2018). Everyday connections between online and offline: Imagining others and constructing community through local online initiatives. *New Media & Society*, 20(10), 3879-3897. <https://doi.org/10.1177/1461444818762364>
- Seyfang, G., & Longhurst, N. (2015). What influences the diffusion of grassroots innovations for sustainability? Investigating community currency niches. *Technology Analysis & Strategic Management*, 28(1), 1-23. <https://doi.org/10.1080/09537325.2015.1063603>
- Williams, J. (2019). Circular cities. *Urban Studies*, 56(13), 2746-2762. <https://doi.org/10.1177/0042098018806133>