

Women's Participation in Wikipedia: Cross-Border Balkan Perspective

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Abstract. Since Wikipedia is a turning point in the way we share and read information in the 21st century, the participation of different demographic groups in this process is of great importance. In this paper, we will address the issues of greater representation of women who edit Wikipedia and more content related to women. The presented conceptual framework is part of an effort to improve the position of women on Wikipedia in Serbian, Macedonian, Croatian and Bosnian, respectively. The paper will present projects that are being implemented for this purpose in Serbia and the region, as well as the results of a recent survey. Quantitative questionnaire and qualitative focus group methods were used for data collection. The aim of this paper is to develop solutions to improve the gender balance on Wikipedia, to create opportunities for overcoming the existing gender differences and their negative effects on free knowledge democracy.

Palabras clave: Wikipedia; Gender; Gender Analysis; Gender Diversity; Gender Equality; Gender Gap

[es] Participación de las mujeres en Wikipedia: perspectiva transfronteriza de los Balcanes

Resumen. Dado que Wikipedia es un punto de inflexión en la forma en que recopilamos, compartimos y leemos información en el siglo XXI, la participación de diferentes grupos demográficos en este proceso es de gran importancia. En este artículo, abordaremos temas de igualdad de género, mayor representación de mujeres que editan Wikipedia y más contenido relacionado con las mujeres. El marco conceptual presentado en este documento es parte de un esfuerzo mayor para mejorar la posición de las mujeres en Wikipedia en serbio, macedonio, croata y bosnio. El documento presentará varios proyectos que se están implementando con este propósito en Serbia y la región, así como los resultados de una encuesta reciente. Se emplearon los métodos de cuestionario cuantitativo y de grupo focal cualitativo para la recolección de los datos. El objetivo de este trabajo es desarrollar soluciones innovadoras para mejorar el equilibrio de género en Wikipedia, que generen oportunidades para superar los factores que causan diferencias de género existentes y sus efectos negativos en la democracia del conocimiento libre.

Palabras clave: Wikipedia; Género; Análisis de Género; Diversidad de Género; Igualdad de Género; Brecha de Género.

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1. Introduction

Wikipedia was created in 2001 and by its definition is an encyclopedic project of free content on the Internet (Wikimedia Foundation, 2021). At the time of its creation, the idea that every individual who had access to the Internet could contribute to the construction of this free and open encyclopedia was radical. Since then, Wikipedia has been increasingly used in everyday life, despite the fact that the information on it has not been revised in the traditional academic sense (Ratković, 2018). Undoubtedly, it has become an influential source of information on the Internet (Reangle et al., 2020), which contains numerous data on various concepts and personalities, including data on prominent women from different countries. This is proven by the fact that millions of people on a daily basis use the information they find on Wikipedia on various topics (Lewoniewski et al., 2019). For these reasons, we can say that Wikipedia is a leading example of historical change, which is reflected in the way in which knowledge can be shared with others. In that sense, it is especially important that the articles on Wikipedia are the result of the efforts of a self-organized group of people who form a unique community on the Internet. They share knowledge about different topics following the generally accepted rules of verifying information through references, neutrality and impartiality (Matei et al., 2011).

In an article published in 2020, Miquel-Ribé and Laniado expand this thesis by claiming that the content does not represent the existing diversity in peoples, places, and cultures of the world (Miquel-Ribé et al., 2020); therefore, the questions of who writes content on Wikipedia and what is written about have become crucial in the democratization process of knowledge creation. This immense free encyclopedia is a step forward, both in terms of collecting free information and the way it's done. Hence, it was expected that Wikipedia would change not only the perception of how we share knowledge, but also the perception of who can share knowledge (Ford et al., 2013).

Despite the openness at several levels, Wikipedia is struggling with the unequal representation of different groups of editors, primarily in relation to the number of female and male editors, as evidenced by the results of our research, which will be discussed later. Although democracy on Wikipedia is reflected in guaranteeing free access and editorial rights to everyone, the authors of this text are of the opinion that openness does not necessarily guarantee equality. Regarding the gender gap, Hinno Saar has provided evidence that "emphasizing the importance of equality was intended to motivate women to contribute" (Hinno Saar, 2019). Seen more broadly, the research conducted by Konieczny and Klein shows that "understanding the biases of Wikipedia's social construction would be a valuable contribution to our understanding of inequality and gender dynamics in collaborative, virtual environments" (Konieczny et al., 2018).

Ensuring and encouraging the representative participation of women seems necessary for the democratization of the reception, construction and redistribution of knowledge on Wikipedia, primarily due to its widespread use by the global general

public. Although the problem of gender asymmetry on Wikipedia is attracting more and more attention, many users of the encyclopedia may not be aware and concerned about this negative aspect and how it affects the content they accept as factual (Oeberst et al., 2020). In practice, this has resulted in a predominantly male Wikipedian community (Torres, 2016).

One of the negative sides of easy access to information on Wikipedia is that if there is absence of an article about something, people may assume it is irrelevant (Oeberst et al., 2020). Therefore, at a global level, there is a need for greater recognition of women about whom there was no content on Wikipedia, but also about their contribution to history and society, which obviously must be more visible (Madžarević et al., 2020). If knowledge is power, we must be aware of who takes responsibility for editing most of the content on Wikipedia, as well as whether it still leads to a certain degree of bias. For this reason, women should be encouraged to edit Wikipedia more to ensure that their voices and interests are more visible (Madžarević et al., 2020).

An initial analysis of the nature of gender differences on Wikipedia provides good starting points for further research with the aim of developing innovative solutions to improve gender balance. Therefore, in this paper, we will refer to the data we obtained by conducting a survey on gender equality on Serbian, Macedonian, Croatian and Bosnian Wikipedia respectively, as well as the efforts of Wikimedia Serbia and other Wikimedia entities in the region for active participation of women; among them, the most important is the global campaign WikiGap, which aims to design, implement and evaluate a series of measures to reduce the gender gap on Wikipedia and attain greater active participation of women editors on the site.

2. Background

The justification of the research we conducted is based on the findings of other institutions and organizations that are dealing with gender differences in the use of computers and new technologies in Serbia and the countries of the region. It is also in line with the Strategy Process of Wikimedia Foundation and one of the resulting goals that have been set for the 2030 horizon. The mentioned goal is to reach “knowledge equity”, which implies to “counteract structural inequalities to ensure a just representation of knowledge and people in the Wikimedia movement”.

From a theoretical point of view, we know little about how factors such as gender may moderate engagement with on-line collaborative tools like Wikipedia. If we comprehend more about what types of work men and women are attracted to, we can turn a more discerning eye to the question of why that may be the case. Understanding the role of gender may also help Wikipedia to do more than simply ask individuals to “contribute,” and instead give the potential contributors some more specific ideas of the type of work they might like to do (Antin et al., 2011).

In accordance to this, it is necessary to point out that in Serbia, according to the data published by the Statistical Office of the Republic of Serbia, computer ownership and Internet use are significantly related to socio-demographic factors, which is characteristic of the early phase of ICT use. Younger people, the urban population, people with a higher level of education and higher material incomes are prone to the use of computers and the Internet in Serbia. According to currently available data given by the Statistical Office of the Republic of Serbia in 2020, most computer and

Internet users are among the youngest, aged sixteen to twenty-four. After that, in each subsequent age category, the number of computer and Internet users decreases significantly, to only ten percent of users among people over sixty-five years of age (Statistical Office of the Republic of Serbia, 2020). The direct link is also clear when it comes to education, where 87,7% of those with higher education use computers, 74,9% with secondary and only 48,5% with lower education (Statistical Office of the Republic of Serbia, 2020).

The use of computers in Serbia is more or less related to the gender of users: this means that in Serbia the number of men who use computers and the Internet is higher than the number of women. However, two positive trends can be observed: first, the number of computer and internet users in Serbia is annually growing, and second, the differences in the number of male and female users are decreasing over time. There were about 5,8% more Internet users among men than among women (Statistical Office of the Republic of Serbia, 2020) and when it comes to the difference in the ability to use ICT, meaning information literacy, we can refer to the most reliable data available to one researcher, which is data from the Statistical Office of the Republic of Serbia; according to their data available from October 2020, men have a higher level of information literacy compared to women; the observed differences are not large but are stable, which indicates certain structural reasons that influence men to be more computer literate than women.

For the comparison, according to the data available for Serbia from 2020, 81.8% of males, and 76% of females used the Internet during 2020 (Statistical Office of the Republic of Serbia, 2020). The same data for Bosnia and Herzegovina from 2019 tell us that the Internet was used by 62.0% of males and 58.5% of females (Agency for Statistics of Bosnia and Herzegovina, 2019). If we compare these results with those in Croatia, we would see that according to the Central Bureau of Statistics, in 2019 men used the internet more, which is especially evident among the population between the ages of fifty-five and seventy-four. (Croatian Bureau of Statistics, 2019).

3. Research Setup

The active engagement of women on Wikipedia among the countries of former Yugoslavia is still a topic that is little known and also insufficiently discussed. Occasional researches conducted on gender equality are insufficient to complement knowledge on this topic and raise people's awareness of the importance of this issue. The aim of our research is to answer the questions whether gender equality in Serbia and in the countries of the region is achieved when it comes to writing and reading content on Wikipedia and whether these societies believe that women are in a position to be equal actors in the formation of content on the site. Also, whether gender, age, employment and level of education affect these issues. The starting point of the research is based on the most general levels of scientific thinking and analysis, which is based on the principles of logic and is subject to the procedures of empirical verification.

3.1. Methodology

Within the paper, the validity of the set hypotheses was verified using a mixed qualitative and quantitative research methodology. The choice of methodologies and re-

search concept is conditioned by the character of the subject and goals of the paper, as well as the set hypotheses based on the literature review. The following research methods were used in the preparation of the paper:

1. Methods of logical explanation: used in the review of existing literature, analysis and synthesis of data from relevant sources and integration of examples from practice. The same methods were used when creating the methodology of conceiving, planning and conducting research. The logical explanation methods used in this dissertation include: methods of analysis and synthesis; methods of generalization and specialization; and inductive and deductive reasoning.
2. Methods of empirical research: used in the performance of practical research work. The empirical research methods used in this paper include: qualitative research —focus groups—; and quantitative research —questionnaire—.

Measurement of relevant parameters and analysis of the acquired results were performed using standard statistical methods.

3.2. Research phases

The design of the research conducted within this paper implies the implementation of exploratory research. In order to achieve the objectives of the research, a different type of mutually complementary data was generated —qualitative and quantitative—. For that reason, a sequential mixed research methodology was used, within which quantitative research was done in the first phase, and then in the second, based on information obtained from a quantitative study, a qualitative instrument was developed —a focus group through which qualitative research was conducted—.

The sequential approach in the case of exploratory studies enables a better understanding of the researched phenomenon and the use of the results procured in this way to perform the next phase of the study (Dube, 2015). In this case, the knowledge about the patterns of behavior on Wikipedia and the attitudes about participation in the survey obtained from the questionnaire analysis were used to get more insights about the habits of using Wikipedia; in line with the sequential model of mixed research, the information acquired from the questionnaire content analysis served in the second phase of the research.

3.3. Creating research instruments

The questionnaire created for the first phase of the research consisted of four thematic parts: 1) habits and behavior of editors on Wikipedia; 2) attitudes and practices related to reading Wikipedia; 3) scales for assessing psychological characteristics and motivations of respondent; and (4 a set of demographic questions.

The first and the second sets of questions referred to the respondents' attitudes about reading and editing Wikipedia and included information on the main motivators for that. The third part of the questionnaire provides psychometric instruments that measure certain psychological characteristics of respondents —motivation to participate in reading or writing on Wikipedia, reasons for writing articles on women and women's topics, discrimination and similar ones—.

After the first phase of the research, a guide for focus group moderation was used. Focus group guide was created as a tool for conducting the second phase of mixed sequential research.

3.4. Sampling

The questionnaire was posted on Wikipedia in Serbian, Croatian, Bosnian and Macedonian on the Google questionnaire data collection platform and offered for completion via the Internet. A specific version of the platform was used, which enabled the setting of a questionnaire with all the predicted branches and the logical guidance of the respondents through the research. Respondents were recruited to participate in the research through mailing lists and discussion hubs on Wikipedia.

As part of the research, two hour-long focus groups were conducted with editors and readers on Wikipedia: A total of ten women participated in the study, divided into two groups of five respondents each. Participants answered a series of questions about their habits and motivation for using Wikipedia.

A total of four hundred and ninety-two participants from Serbia, Croatia, Bosnia and Herzegovina and North Macedonia participated in the first phase of the research conducted in the period from September 28th to November 1st, 2020. The response of the female population was 55.1%, male 43.7 % and 1.2% of non-binary respondents.

4. Results

When it comes to the gender structure of the sample, the authors of the present article attempted to include the male and female population, different age groups and categories of employed and unemployed. Although there is a noticeable imbalance between the answers received on Wikipedia in the Croatian language and other Wikipedias, which did not affect the later crossings of answers and the obtained results.

When it comes to women who edit Wikipedia, sixty-four out of two hundred and seventy respondents answered that they edit Wikipedia, and the main reason they started was the project which they were engaged in. The largest number of those women is placed in the group of employed, highly educated women. According to the data obtained in the survey, out of two hundred and seventy surveyed women, the largest number of editors are women who are employed, forty-two of them, while almost twice less, twenty-two of them, belong to the group of unemployed persons. The same trend is noticeable when it comes to women whose highest level of education is the sixth degree or higher, where the obtained results indicate that out of one hundred and fifty-two of them, Wikipedia is edited by forty-nine women, while the other one hundred and three only read it.

When asked about their opinion regarding gender discrimination on Wikipedia, only twenty-five out of four hundred and ninety-two respondents indicated that there is gender discrimination on Wikipedia; in addition, only eight of them believe that they have experienced some kind of discrimination on Wikipedia.

After the surveys, Wikimedia Serbia organized two focus groups, with ten women of different ages and levels of education, in order to evaluate, generalize and in-

interpret the results obtained through the survey. Among the most significant results, the focus group identifies that the situation between male and female editors on Wikipedia depicts society as a whole and that it is a consequence of socio-historical circumstances. The participants largely agreed that Wikipedia has clear rules, that no one is forbidden to edit Wikipedia, but also that we should work on encouraging and motivating women to edit on it. One of the conclusions is that the best results are achieved by bestowing freedom of choices and education, and not always by positive discrimination.

5. Discussion

Bridging the gender gap on Wikipedia is a comprehensive process and the effects of one-time actions are not sustainable; systematically organized actions aimed at strengthening and empowering women on Wikimedia projects are needed.

In a survey conducted by the Wikimedia Foundation in 2017, several hypotheses about women and content about women on Wikipedia were tested through different methods (Hussain, 2017). As one of the tools for controlling the content, there is a possibility for reverting the edits (Kiesel et al., 2017). Reverting means reversing a prior edit or undoing the effects of one or more edits, which typically results in the article being restored to a version that existed sometime previously. The research confirmed that female newcomers are reverted more than male, but being reverted as newcomers has the same apparent effect on males and females (Hussain, 2017). As a common reason why women edit less, there is a lack of self-confidence both in terms of technical skills and in terms of the value of their contribution. Even women who only read Wikipedia articles have explained that they do not have enough skills to become editors. In addition, female editors don't like fight culture on Wikipedia: they tend to share and collaborate rather than delete content or make changes. That is why they avoid working on an already existing article, because it can lead to conflicts and editorial wars.

When we look at the gender gap on Wikipedia, we have to consider two aspects: the first is the gap in terms of content about women on Wikipedia, while the second concerns a much smaller percentage of female editors compared to male editors. In both cases, it can be concluded that women have been repressed due to historical barriers and this has reflected on the visibility of women's achievements in various fields (United Nations Human Rights, 2014). In the following, we will address both mentioned aspects.

5.1. Content about women on Wikipedia

Before discussing the issue of content about women on Wikipedia, it is necessary to look at the level of notability that every article in this encyclopedia must achieve: the topic is significant if it has been the subject of several non-trivial published works whose sources are reliable and independent. This requirement ensures that there is enough source material to write a verifiable, encyclopedic article on the topic. However, the criteria for the notability, as well as the parameters that are observed when patrolling the content, are determined by the Wikipedia community (Kiesel et al., 2017). Once again, it is important to emphasize that communities are different from

one language project to another; although the projects are exclusively linguistic and not national, the people who participate in them are influenced by the culture of the environment in which they live. Therefore, if the environment is patriarchal, it is very possible that this will affect the editors, meaning their attitude towards female editors or biographies of women. Although there are defined criteria for whether a certain person is notable enough or not, we often talk about community members' impression. In other words, this means that the community members can vote to delete articles if they believe that the notability criteria has not been exceeded (Matei et al., 2011). This and the fact that women's contribution throughout history is often neglected and insufficiently recognized, only further complicates the achievement of gender equality.

At the beginning of 2020 a research showed that there are thirty-five thousand four hundred and ten articles on men on Serbian Wikipedia, while that number is much smaller when it comes to women's biographies: eight thousand three hundred and three (Bartov, 2020). If we compare the statistics from June 2016, when the percentage of women's biographies in relation to men's biographies was approximately 17.7%, it can be seen that the ratio changed positively by 1.29%. A survey conducted for the purposes of this paper found that only 26.1% of women who read Wikipedia daily or at least twice a week believe that there is a balance between content about women and content about men. Since this is part of global aspirations, if we look at the results at the global level, we will notice that the best success in this regard was Wikipedia in the Punjabi language, where this ratio changed by 17.01% (Bartov, 2020).

The reason why there are far fewer biographies of women compared to biographies of men can be seen in historically imposed cultures and environments that put women in normative frameworks and didn't allow them to develop in different areas (Department of Economic and Social Affairs of the United Nations, 2010). If we look at it historically, women weren't allowed to vote, and therefore they were unable to actively participate in politics. Then there is the dominant presence of men in the field of science, but also in many other fields: certain achievements did exist, but they were neglected or remained in the shadow of men's achievements. This may be one of the reasons we have the current disparity on Wikipedia. The imbalance is also due to the lack of available sources that can serve as a reference on the online platform. Even when there are sources, they are often stored in the archives of institutions, and they are not digitized and published, so it can be concluded that certain women are not important enough.

Marriage and sex-related content are more frequent in women's biographies and knowledge related content is highlighted in men's biographies. Words most associated with men are mostly related to sports, while the words most associated with women are arts, gender and family. Of particular interest are two concepts strongly associated with women: her husband and first lady (Hussain, 2017).

When we look at the male's aspect in this topic, another problem is the lack of awareness of men when it comes to discrimination experienced by women, that is, when articles about women are deleted. Activities carried out to reduce the gender gap on Wikipedia are often perceived as reverse discrimination. Focus group participants cited examples in which they were often being suggested that they "should look prettier" because of the work they do or otherwise they will not do the job well. It is surprising that some of the suggestions came from women, which leads to the

conclusion that women themselves, under the influence of society and patriarchal culture, renounce certain rights or accept the roles imposed on them by stereotypes—housework and family care—. Focus group stated that men cannot feel this type of discrimination because they have not experienced it personally and therefore use offensive jokes. An example of apparent awareness is reflected in the attitude of the Wikipedia community that women are allowed to edit and are invited to do so, but on the other hand gender-sensitive speech is rarely represented on the project. Asked what would be the best way to solve this problem, the focus group suggested interviews and training through which men could get acquainted with the problems that women face.

5.2. Female editors on Wikipedia

The global gender gap or increase in the number of female editors is difficult to track for several reasons: percentages are difficult to compare due to the different samples of participants in previous research. There is also the problem of defining the editor differently. Some language projects consider editors to be those who have an open account, but the problem arises when the account is inactive for a certain period of time. Also, women are less likely to choose to participate in surveys (Bayer, 2015).

In 2008, a survey on gender structure found that less than thirteen percent of Wikipedia contributors worldwide were women, and that percentage even decreased to nine percent in 2011 (Torres, 2016). The former executive director of the Wikimedia Foundation states nine reasons why such an imbalance is noticeable on Wikipedia: 1) some women don't edit Wikipedia because the editing interface isn't sufficiently user-friendly; 2) some women don't edit Wikipedia because they are too busy; 3) some women don't edit Wikipedia because they aren't sufficiently self-confident, and editing Wikipedia requires a lot of self-confidence; 4) some women don't edit Wikipedia because they are conflict-averse and don't like Wikipedia's occasional fight culture; 5) some women don't edit Wikipedia because the information they bring to Wikipedia is more likely to be reverted or deleted; 6) some women don't edit Wikipedia because they find its overall atmosphere misogynist; 7) some women find Wikipedia culture to be sexual in ways they find off-putting; 8) some women whose primary language has grammatical gender find being addressed by Wikipedia as male off-putting; and 9) some women don't edit Wikipedia because social interaction and a welcoming tone are important to them, and Wikipedia offers fewer opportunities for that than other sites (Gardner, 2011).

A research was conducted on Serbian Wikipedia in 2015, with the aim of mapping the gender gap in terms of male and female editors. Wikipedia has a gender option within the user settings, and it was noticed that out of a total of 157,353 registered users present on Wikipedia at that time, only four thousand two hundred and two users have gender settings enabled. Out of those users, as many as three thousand four hundred and nine selected males, while seven hundred and ninety-three selected females. Within the results of the research, it was noticed that women are less active in comparison to men when it comes to making edits after creating the account (Maljković, 2015).

The survey conducted for the purpose of this work included two hundred and seventy women, two hundred and fifteen men and seven persons who identify themselves in another way. It has already been mentioned that female participants in the

survey stated their participation in the chapters or community projects as the biggest motivation why they edit. From this we can conclude that the incentive for women in the form of projects is good and should be continued. Other important factors for editing are lack of time and employment, also explained in the Results section. The focus group is divided when it comes to comparing the free time of employed women and employed men. Some participants of the focus group pointed out that a woman has less time to edit because of the household chores, while others believe that these relationships at home can be balanced between a woman and a man, especially when it comes to women who are financially stable. There are also large differences between unmarried employed women and those that have a family and are employed.

Interestingly, male editors —23.7%— edit content about women more than female editors —11.8%—. This correlates with the fact that more men —28.8%— than women —18.1%— believe that there should be more female editors on Wikipedia. Only five percent of survey participants believe that there is some form of gender discrimination on Wikipedia, while six women pointed out that they have experienced some form of gender discrimination. Sixty percent of women edit Wikipedia less than four times a month.

In a conversation with the focus group, it was concluded that the problem of gender discrimination is deeply rooted in society, starting from the upbringing methods in which girls and boys are given toys based on stereotypes, to the strongly represented patriarchal culture in the Balkans. If gender discrimination exists on Wikipedia, it is only a reflection of the society in which editors live; due to insufficient encouragement of women in society, they feel scared not only when it comes to editing, but also taking on some bigger roles on Wikipedia —administrator, patrol and other roles—. However, the group believes that increasing the number of women in such roles can be a good incentive for other women.

6. Projects

6.1. Global Projects

The problem of gender gap in terms of Wikipedia editors, as well as the imbalance between content about men and content about women, is present in all language versions of Wikipedia, which is why there are user groups, organizations and various projects whose goals are to establish balance. Some of such groups and projects are explained below:

- *Women in Red*, which aims to reduce the imbalance between biographies of women and biographies of men;
- *The WikiWomen* user group, which has a variety of activities, primarily those designed to create a safe space for women on Wikimedia projects;
- *Diversity conference*, an event organized to increase the diversity of participants in projects and content that is brought to Wikimedia projects;
- *WikiWomenCamp*, a conference for women in the Wikimedia movement;
- *Art&Feminism* user group dedicated to increase coverage of articles about women from the art world;

- *Gender diversity visibility* community user group that works to increase the visibility of diversity through its activities and projects;
- *Whose Knowledge?* a user group working to correct misrepresented knowledge on *Wikimedia* projects; and
- *WikiGap*, a campaign organized in cooperation with Swedish embassies around the world.

The most important global campaign that was realized on Serbian Wikipedia is certainly *WikiGap*. Namely, the Ministry of Foreign Affairs of Sweden and Wikimedia Sweden have launched an initiative to organize a global edit-a-thon called *WikiGap*, before and after March 8th, International Women's Day. This global idea included annual events in over fifty countries, from Sweden over Indonesia, to Egypt and Colombia in collaboration with local organizations. The high amount of responses from local organizations is proof that the problem of the gender gap on Wikipedia is present everywhere in the world. Within twenty-nine *WikiGap* campaigns around the world, eleven thousand nine hundred and forty articles about women were written and improved, which had almost forty-three million views. In Serbia, the *WikiGap* edit-a-thon brought together editors who wrote about notable women who made a change in society with their work, but they were not sufficiently visible and recognized until now. By having articles in the largest online encyclopedia, the work of these women is available not only to current readers, but also to editors who want to continue editing and improving information in the future. The Ambassador of Sweden in Serbia, H.E. Jan Lundin said that he believes that many women are responsible for many good deeds, but so far, they have not been recognized for that merit. As a representative of a country that has a strong strategy for improving the position of women in society, he has pointed out that these workshops are a great opportunity to put things in the right order (Ratković et al., 2019). During three edit-a-thons, one of which was held in Niš, and two others in Belgrade, a total of one hundred and twelve biographies of important women were written and improved. During the event, the Commissioner for Protection of Equality in Serbia pointed out that women are less visible precisely because they have not yet conquered the public sphere, regardless of the great progress and achievements made (Madžarević et al., 2020). It is especially important that the notable women get space on Wikipedia, an online platform that is one of the most read sites in the world (SimilarWeb, 2020).

6.2. Projects for women's engagement on Wikipedia: examples on Serbian Wikipedia

Empirical methods in the paper confirmed the validity of realized projects in the local and international environment, with the aim of empowering women through Wikimedia projects. A questionnaire and interviews with focus groups showed that female editors, regardless of age or demographic structure, are in many cases for the first time involved in contributing to Wikipedia through Wikimedia affiliate's project activities. This leads us to better explain the projects and explore not only the quantitative but also the qualitative results, together with the impact achieved through them.

In addition to successful results of the projects, we will pay attention to the psychological characteristics of the participants that are important for understanding the

motivational factors and barriers that female editors encounter. This aspect was especially addressed in the discussion with focus groups that were heterogeneous.

The projects started in 2014 and were created on the basis of available data and goals at the time, and here they are presented in order to show examples of good practice, which can be adapted and continued in the future. Precisely for the purpose of their adaptation, we wanted to conduct research in an effort to see whether such projects are still justified and appropriate. Having in mind everything realized, we can see how the situation has changed. We received data on the motivational factors of editors that mostly refer to Wikimedia Serbia's projects. In order for them to be better understood, we will list and better explain the *FemWiki* project and the *Wiki Librarian* project. It is important to point out that these projects, in addition to their planned results, had other effects. In that sense, the participants in the projects launched other initiatives and enabled the organic growth of the number of female editors.

Having in mind the statistics mentioned in paragraph five, problems and imbalance that occur in all language versions of Wikipedia, Wikimedia Serbia, as a chapter working to promote and enrich Serbian Wikipedia, launched the *FemWiki* project in 2014.³ The aim was, on the one hand, to encourage women to edit Wikipedia, and on the other hand to contribute to the quality and quantity of articles on feminist and gender terminology and women's biographies. In order to determine the current state on Serbian Wikipedia in terms of the number of female editors and content about women and with the intention to define activities based on this state, the initiators of the project considered several key points:

- Although applicable in Serbian language, gender-sensitive speech wasn't used on Serbian Wikipedia;
- Articles about the most famous feminist theorists did not exist;
- Gender did not exist as a separate article; and
- There was no mention of gender discrimination in the article on discrimination (Wikimedia Serbia, 2014).

Therefore, it was recognized that in addition to independent activities that would be implemented by the initiators of the project, it is necessary to cooperate with relevant institutions and organizations dealing with this topic. This meant actively involving contributors not only in terms of content about women, but also in terms of training their members so that they could enlarge and update content on Wikipedia during and after the project. Activities designed in this way have enabled the realization of two primary goals: increasing the content and the number of female editors on Wikipedia. Through Wikipedia editing workshops, participants gained technical skills—editing skills, critical thinking, proper referencing, wiki syntax—, but more importantly, they overcame the fear of judgment and potential deletion of content. This was a safe space for contributing to Wikipedia and sharing knowledge in which women learned that information technology was not an area in which absolute male dominance was implied. The trainings and workshops also served to talk to women who have encountered discrimination and empower such women to edit and become part of a global online community.

³ https://sr.wikipedia.org/wiki/Википедија:Фем_Вики

Part of the *FemWiki* project was decentralization in various cities in Serbia, where there is a greater possibility of discrimination based on gender. This fact is supported by the socio-historical factors in the Balkan countries: in Serbia, the influence of patriarchy is still present, in which the father has the highest authority and the greatest respect, and in modern times the man in general, while the woman has a subordinate role; in such a system, women did not have the space to develop and fight for their place. Although significant progress has been made in Serbian society, in underdeveloped parts of the country women are more likely to dedicate themselves to family, and in the case of having a job, lack of time is a major barrier to acquiring other skills. In smaller cities, digital literacy is also a problem, as well as the habit of a socialist society where everyone has one job throughout their entire life. Therefore, one of the goals of the project was to provide opportunities for women in such circumstances to participate in the training and gain independence in editing Wikipedia.

During the 2014, eighty articles were written and improved through workshops and competitions on Wikipedia. Qualitative indicators of the project's success were active discussions at two public events where participants presented the topic of women on Wikipedia and the FemWiki project in general. In addition, an active approach to tackling the shortage of women's content on Wikipedia was presented in the panel *Redefining Feminism: Challenge to Stereotypes, Simplification, Prejudice* at the *Gender and the Left wing* event, as well as in the panel *Women in Technology*, within the *BeFem Festival*. When it comes to international activities, the project was presented at the *Women Rock IT* regional conference in Sarajevo, at the *Ada camp* in Berlin and at an event in Tirana. In 2015, the *Women's Wiki Camp* for women from Belgrade, Tirana and Priština was held, during which the participants had workshops and discussions on the motivational factors of women to arrange better cooperation between editors.

A significant step within the project was made through the establishment of cooperation with Vesna Jarić and Nadežda Radović, authors of the *Dictionary of Gender Equality* from 2010. They agreed to upload all the content of the dictionary on Wikipedia. Some of the one hundred and two determinants already existed, but have been expanded and improved. On Serbian Wikipedia, *FemWiki* was the start of acknowledging the problem of the gender gap and the beginning of work in order to reduce this imbalance.

It should be noted that during the implementation of the project, there was no discrimination based on gender, so the participation of men in the workshops was both allowed and desirable. This helps raise awareness among men about the position of women and all the challenges they face. Well informed and aware in this way, men were able to develop a greater level of understanding for women and help projects through active participation or through increasing content about women. One of the ways to strike a balance on Wikipedia is certainly to focus on the right target groups that will be an important part of the project. Thus, Wikimedia Serbia cooperated with the Faculties of Philology, where there is a greater presence of women among students, or with librarians, where the case is similar. With this in mind, cooperation was established with the Faculty of Philology in Belgrade, Novi Sad and Niš through the *Wikipedia Education Program* in Serbia. In addition, the Wiki Librarian project was launched in cooperation with the University Library "Svetozar Markovic", which aimed to network librarians throughout Serbia in order to acquire Wikipedia editing skills and increase free content from the Library's archives. Simi-

lar to the *FemWiki* project, decentralization has played a big role. The project covers numerous cultural institutions in Serbia. In addition to libraries, the workshops were attended by representatives of museums, archives, institutes and other institutions that had meaningful sources relevant for the articles. The *Wiki librarian* also included increasing free multimedia content on the Wikimedia Commons, which was used to illustrate articles; the content was digitized and in the case of publications *OCRed*. This example proved the necessity to target professions where women are more represented. The librarians were also more interested to join other activities of Wikimedia Serbia, whose ultimate goal is to achieve balance in the gender structure on Wikipedia and other Wikimedia projects.

In regards to content on women's topics and women's biographies, Wikipedia competitions, edit-a-thons and the *WikiGap* global campaign were the main focus on Serbian Wikipedia.

Wikipedia competitions are projects with the aim to increase free knowledge by creating and improving *Wikipedia* articles in the form of contests, but also to increase the motivation and active participation of the community on Wikimedia projects. All competitions have given topics and a timeframe during which participants write and improve articles. In addition to the competition within the *FemWiki* project, which concerned women's topics, four competitions were organized on Serbian Wikipedia with the aim of improving biographies of notable women. The first competition was organized within the *FemWiki* project in 2014, and then in 2017, 2019, 2020. Such actions are productive, because they often bring biographies that are unlikely to be written. The reason for that is the thorough preparation before the competition, which includes creating a list of topics that can be written, but also translated from other languages. Participants usually translated English articles, since English Wikipedia is the largest online free encyclopedia and therefore has quality and reference-based articles. Within the creation of the list, women from different fields are also targeted—science, medicine, politics, human rights, literature, music, history, etcetera—. This is how women whose achievements are neglected are most often targeted because men are more present in certain areas. Networking of editors in order to better cooperate and advise each other is also a part of the competitions.

During the three competitions, two of which was organized by Wikimedia Serbia, and one by the Wikimedians of the Republic of Srpska, five hundred and ninety-two articles were written and improved, which indicates the great importance of such endeavors.

The support that comes from relevant institutions and organizations is crucial, but also the one from the government, since it can greatly influence society; with this in mind, Wikimedia Serbia received the support of the Ministry of Labor, Employment, Veterans and Social Policy of the Republic of Serbia. The Ministry and Wikimedia of Serbia organized an edit-a-thon in which editors wrote articles about Serbian notable women from the UNESCO fields—education, science, culture, art, information and communication—and thus worked together to increase the presence of these women on Wikipedia.

7. Conclusion

In this paper, we have pointed out various aspects of gender inequality with a special emphasis on Serbian Wikipedia and its close language variants: Croatian, Bosnian

and Macedonian Wikipedia. Gender inequality is an important topic, as the use of Wikipedia is growing exponentially, together with its importance as a central repository of knowledge on the Internet that is being used around the world, including for educational purposes.

The results of the research presented in this paper reveal significant differences between genders at different levels of use of Wikipedia, which cannot be attributed to the fact that Wikipedia actually depicts the world in general and that in that sense it is not specific in any way. For example, differences regarding content on Wikipedia must be attributed exclusively to those who write them, namely the editors of Wikipedia. We believe that the differences on Wikipedia in that sense can be partly explained by the manner in which the lives of notable men and women are documented in our societies, and that gender inequality represents the unavailability of appropriate sources. Since Wikipedia editors rely on credible, accessible, already published sources, this gives us an explanation and answer to the question of which women are notable enough to deserve an article on Wikipedia. In addition, it is well known from the standpoint of social psychology that people generally favor the group to which they belong, in relation to other people, and having in mind the ratio of male and female editors on Wikipedia, it should come as no surprise that there are not enough articles about women.

The contributions of this paper are twofold and the realization of the first directly increases the quality of the second:

- 1) The contribution to raising awareness of gender differences on Serbian, Croatian, Macedonian and Bosnian Wikipedia and the different ways in which such biases can be expressed. Regardless of the fact that this paper looks at previous actions and endeavors related to the topic, it is a very important starting point in understanding the gender gap on Wikipedia. It is especially significant that the paper examines the situation on the language versions of Wikipedia in the Balkan countries where patriarchal culture still prevails. A better understanding of gender inequality on Wikipedia is a sure way to achieve balance and solve problems. We have chosen a methodology that includes an internal —Wikipedia editors— and an external target group —Wikipedia readers—. Through this work, the editors, but also those who use Wikipedia on a daily basis, can have a better insight into statistics and how they personally can influence them. An internal target group is a group that can make changes to Wikipedia regarding rules, notability, voting, and other administrative matters that may be a barrier to the new female editors or articles about women. On the other hand, by raising awareness of the need for a greater presence of women on Wikipedia and content about them, we motivate the external target group to think in that direction and to launch initiatives that will bring us closer to balance.
- 2) The presentation of implemented actions and potential solutions to reduce gender differences in the future. The first goal is reactive, because it is a response to the long-standing attitude towards women in certain fields. In contrast, the second goal is proactive, as it focuses on outreach and taking concrete steps to increase women's visibility on Wikipedia. In this paper, we present projects that have been implemented with the purpose to adapt them to future goals and achieve the desired results. It is important to note that the

projects are not closely related to the local environment, but are also feasible in the international environment, especially in the activities carried out by Wikimedia affiliates. The openness of these projects enables great involvement and visibility of women.

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