

Knowledge Sharing in the Adminship Communities of the Eastern-European Versions of Wikipedia Pages

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Abstract: Adminship in the Wikipedia community represents a specific kind of organizing activity of a virtual community of practice. It requires a high level of trust amongst the users and the engagement of an admin in the life of the community as a non-paid function, which is significant in terms of sharing and creating knowledge in the form of the content of Wikipedia. As in every form of human cooperation, it is subject to the cultural influences of the country, whose language version it represents. The aim of the research was to distinguish and describe the characteristics of the adminship and admins' social and content-creating activities in the seven East European versions of Wikipedia (among others, Poland, the Czech Republic, Hungary), while taking into consideration the cultural characteristics of the cultures involved. The method used was the quantitative content analysis of the admins' activity in different spaces of Wikipedia activity (organizing, content-creating). In order to obtain the data of admins' activity, the xTool was used, which is a dedicated online tool and database of Wikipedia's users' activity. To analyze and determine the trends and correlations of admins' activity in different language versions of Wikipedia, Statistica software was used. The results of the study suggest that despite the common history and characteristics of East European countries, there are some differences characterizing adminship work in terms of organizing and creating the knowledge process in different Wikipedia language versions, particularly considering certain cultural dimensions distinguished by Hofstede (e.g. power distance, masculinity).

Keywords: Adminship, Community Of Practice, Knowledge-Sharing, Organizing, Wikipedia

1. Introduction

In today's knowledge sharing practices, a notable role is played by the virtual communities, thus many studies have been conducted to examine this phenomenon. Wikipedia advances to become a virtual community of practice aimed at producing and organizing knowledge in numerous language versions. Organizing large numbers of volunteers for activity in a knowledge project such as Wikipedia poses certain challenges (Konieczny, 2018). It requires attracting and retaining competent and willing volunteers who learn and constantly improve the editorial policies, thus ensuring the high quality of content. The collaboration of volunteers includes a clash of opinions and resolution of conflicts which require some type of coordination of activities. Eric Raymond's portrait of "a great babbling bazaar of differing agendas and approaches" leading to a stable community of users is widely recognized in open source software development (Capiluppi, Michlmayr, 2007, p.32). Researchers have been absorbed by the concept of this complex social environment for over a decade, which prompted them to examine how individuals coordinate actions to achieve goals in open source initiatives such as Wikipedia.

In the process of the creation of open knowledge content in Wikipedia, effective management of volunteers means not only aligning people with common goals, but also taking care of the well-being of the users and providing them with technical and substantive support. Self-governing communities of practice such as Wikipedia face challenges in meeting content creation goals by optimizing volunteer efforts and a division of tasks (Smirnov, Oprea and Strohmaier 2023). Providing users with an engaging and rewarding experience is essential to attracting and retaining user participation, which is often addressed through discussions about motivations and non-material rewards. Although the information content in online communities plays a key role and serves as an important motivator of engagement, online communities go beyond the mere dissemination of information. They represent social systems that exhibit the key characteristics of small groups, voluntary associations and formal organizations (Bürger, Schlögl and Schmid-Petri 2023). Similar to the dynamics observed in various groups and organizational settings, integration into an online community typically involves establishing connections with the collective entity or its individual members, ultimately strengthening a sense of commitment to these relationships (Butler 2004, Kraut et al. 2008). Hence, there are not only pages or spaces where the knowledge content is produced, but also the so-called "meta" spaces in Wikipedia, where coordination of work, communication and discussion take place.

One of the groups of Wikipedia users which is very significant for the whole community are admins, who concentrate on "meta" tasks connected with ensuring the level of productivity of the Wikipedia community. Their main role is to monitor community activities and look for opportunities to provide help or correct mistakes, which involve removing vandalism, blocking IP addresses or editing secure pages (Kraut et al. 2010). The route to becoming an administrator is to request for the adminship (RFA). The RFA process includes three steps as

follows: a nomination statement, questions and answers about the previous and future behaviours of a user, and statements of support, opposition, or neutrality by Wikipedia community members. The voting process is transparent, thus allowing any editor to review the nominated editor's records, inquire about the nominee, and assess their proficiency in terms of using administrator privileges (Ren, Zhang and Kraut 2023).

The aim of this paper is to investigate the adminship activity in the seven languages of Wikipedia chosen from South Eastern Europe (Poland, Slovenia, the Czech Republic, Hungary, Romania, Bulgaria, Ukraine) and its relations with the cultural dimensions of the countries studied. This paper is structured as follows: Section 2 highlights the literature review by explaining the major theoretical foundations of the current trends of Wikipedia community of practices in the analyzed field. Section 3 presents the method of data collection. Section 4 reports and discusses the findings, while Section 5 concludes the paper and provides the implications of this study.

2. Literature Review

The social roles theory explains the development and influences of social roles on human behaviour, e.g., analyzing role-taking and role-playing behaviours (Eagly and Wood 2016). Likewise, in online communities there are certain roles that users may take on and perform. In Wikipedia projects in general, the relationship between users is a partnership, however, one of the roles that stands out is that of adminship. This role is based on the level of commitment to the community and eagerness to contribute to the community (Teng et al. 2022). What plays a crucial role in the emergence of leaders in Wikipedia is that of merit (Ren, Zhang and Kraut 2023). Wikipedia adminship includes not only knowledge contribution, but also social contribution, while also, among others: providing support and ensuring the quality of work.

Large-scale open source projects face management problems that involve controlling the integration of distributed knowledge resources and how to coordinate such activities in order to create shared value. Wikipedia editing activity is knowledge-intensive (Arazy and Gellatly 2013). Millions of minuscule contributions must be assessed, selected, adapted and sometimes rejected, which means that editing work should be directed to create value (Aaltonen and Lanzara 2015). For effective collaboration to prevail among project volunteers, the work is broken down into small parts. This allows individuals with different expertise, interest levels, while also availability to take part in editing. The integration of these contributions is crucial for the project's success, which is usually managed by project leaders who hold the final decision-making power. Despite the common trend of a few individuals carrying most of the workload in peer production systems, short-term contributors also play a significant role. The organizers of online collaborative projects are tasked with recruiting new members and ensuring continued engagement from the existing ones. (Bruckman 2022, pp 59-62) This is the reason why administrators' activity is so crucial for unhindered production of knowledge on Wikipedia.

The authority of the managerial activity of administrators is inclined towards facilitating rather than dictating. Although admins influence significant policy implementation, they do not dictate the specific assignments to the users. This could be attributed to admins potentially lacking the necessary time or focus to address individual personnel matters. Alternatively, the reduced managerial control observed in peer production systems may be inherently linked to the voluntary nature of these communities (Kittur, Pendelton and Kraut 2009).

Ung and Dalle (2010) investigated 644 French WikiProjects in terms of the relationship between discussion activity on the project's talk page and editing activity and concluded that the most active discussion participants were not the most active editors. In most cases, a small group of active discussion participants played a major role in organizing the work of a wider group of peripheral members rather than being involved in the larger article content creation. These smaller groups of project members may function as a hub acting as facilitators and technical support by answering questions etc.

The English language version of Wikipedia defines administrators of the user group as follows: "administrators are volunteer editors trusted with access to certain tools on the English Wikipedia. They are expected to observe a high standard of conduct, use the tools fairly, and never use them to gain advantage in a dispute" (<https://en.wikipedia.org/wiki/Wikipedia:Administrators>). Meanwhile, in the Polish version they are described as: "a group of committed and trustworthy users who are members of the community and have additional permissions." The tools at their disposal do not include editorial control over Wikipedia; they primarily serve organizational and preventive functions. Administrators also provide assistance in editing Wikipedia, especially for newcomers. (<https://pl.wikipedia.org/wiki/Wikipedia:Administratorzy>)

Administrators (also referred to as sysops, system operators or admins) have such technical abilities as the following:

- deleting and undeleting pages, while also viewing deleted revisions of pages;
- blocking and unblocking users, IP addresses (or ranges of IP);
- protecting and unprotecting pages, editing protected pages;

Other additional rights are regulated individually in different language versions of Wikipedia. Administrators commonly take responsibility for making decisions about the outcomes of certain discussions, such as deleting or moving discussions, but other editors may also close discussions in certain cases (<https://en.wikipedia.org/wiki/Wikipedia:Administrators>). Wikipedia's administrative tools are compared to a janitor's mop, which leads to describing the act of being granted the adminship as being "given the mop" (Figure 1).



Figure 1: Picture representing admins' work in Wikipedia

Source: <https://en.wikipedia.org/wiki/Wikipedia:Administrators>

Wikipedia editors and participants in other online volunteer collaborations are not ordered to participate by any manager and they are not remunerated in any material way. The question arises as to why do they do it? Benkler (2008) maintains that social–psychological rewards replace material ones. Hence, the social aspect of Wikipedia membership and adminship is significant for the users. The users with admin status perform this role with a sense of responsibility for the community, not for the economic reward. Their activity is connected with the substance of their role (fighting with vandalism, while also deleting, correcting, organizing work on the content of articles), as well as discussing, supporting, helping the users, including newcomers, thus making them more socially oriented.

Wikipedists are individuals who are loosely connected by common goals and policies creating the code of conduct. Administrators are not traditional leaders, as the leaders cannot dictate the tasks to be executed. The leadership is based on “the hierarchy that results from the respect held for experts and the rules for actions defined within the communities” (Skolik 2012; Benkler 2008). Skolik and Jemielniak (2011) analyze the partnership and leadership characteristics of Wikimedia projects particularly focusing on the process of leader emergence and projects created by them. Initially, the adminship rights in Wikipedia were granted through consensus without the need for formal procedures. However, due to growing disparities in rights access, a voting system was implemented. This process lasts 7 days, during which candidates seeking these rights are evaluated based on their past contributions and responses to questions posed during the voting process.

The user's contribution in knowledge is the main criterion to be considered in the assessment of the candidate for an admin, in which a lack of contribution results in failure. Proving the competence in the creation of knowledge and the willingness to perform admin's tasks, including interacting with people, building relationships with the community's core members are the prerequisites to be granted the rights in question. Hence, both content-creating and social aspects seem significant (Clémente, Bothorel and Jullien 2015). Burke and Kraut (2008) identified important characteristics for an administrator and created a model which may be applied as an AdminFinderBot for choosing possible future admins, as a tool for self-evaluation, or as a dashboard with statistics for voters assessing candidates for administrators. Leader emergence processes in Wikipedia were also studied by Das, Lavoie and Magdon-Ismail (2016), especially the procedures to determine if an editor would use admin rights for malicious activity, which could prevent trolling by helping to detect possible vandals before they are granted admin rights. Selecting a suitable candidate for the administrator is crucial due to the threat of overuse of admin's rights, e.g. the cases have been observed, in which post-appointment administrators focused

on more controversial topics than before their promotion or appeared to push positions which violated Wikipedia's policy on neutral points of view.

The impact of diversity of tenure and interest of users of Wikipedia on their productivity and withdrawal from Wikiprojects were investigated by Ren, Chen and Riedel (2015). The investigated variables influence the level of productivity and withdrawal of the users. Projects with a moderate level of tenure disparity had higher productivity than projects with a low or high level of tenure disparity. High tenure disparity was also related to higher withdrawal. The tenure studied concerned Wikipedia users in general.

In terms of public and private activity of administrators of an online community, Teng et al. (2022) investigated these issues in terms of administrator roles based on the case of a popular online community in Taiwan Bahamut. The results indicate that taking on the social role of an administrator helps to initiate the role-appropriate behaviour of opinion leadership and public space contribution rather than private space contribution. This analysis of the administrators' behaviour is very insightful, however, it did not include the admins' contribution in the Wikipedia community.

In order to investigate the differences between cultures, five dimensions of cultural diversity were distinguished by Hofstede, such as the following: power distance, individualism (versus collectivism), masculinity (versus femininity), uncertainty avoidance and long or short-term orientation (Hofstede, Hofstede and Minkov 2010). Some of the researchers studied what kind of impact cultural differences have on online communities or web content contribution. Pfeil et al. (2006) studied the influence of cultural differences on Wikipedia contribution with the use of Hofstede dimensions, albeit studying only the history of one article in four language versions of Wikipedia and without any particular focus on administrators. Moreover, cross-cultural analysis of four language versions' content was conducted by Hara, Shachaf and Hew (2010). The authors analyzed the typical behaviours of users in three types of discussion spaces (Talk, User Talk, and Wikipedia Talk) and obtained the results confirming the existence of culturally dependent differences in various cultural dimensions.

However, at least one gap exists in this line of research, as little has been done to investigate how different types of admins' contributions are influenced by particular cultural factors and what kinds of contributions are shaped by cultural context. Thus, this paper aims to fill in the afore-mentioned gap by examining how these phenomena occur.

The hypotheses set in this research are as follows:

1. The tenure of an admin is correlated with his/her social activity and content creating activity. The more experienced an admin is, the more active he/she is in both spheres.
2. The tenure of an admin is culturally dependent. All cultural dimensions distinguished by Hofstede are correlated with the Wikipedia admins' tenure.
3. Social activities in the seven East European versions of Wikipedia chosen are culturally dependent. All cultural dimensions distinguished by Hofstede are correlated with Wikipedia admins' activities.
4. Content creating activities in the seven East European versions of Wikipedia chosen are culturally dependent. All cultural dimensions distinguished by Hofstede are correlated with Wikipedia admins' activities.

3. Methodology

The aim of the conducted research was to study the activity of Internet users fulfilling the role of admins within Wikipedia in the East European versions of Wikipedia chosen (Poland, Slovakia, the Czech Republic, Slovenia, Hungary, Ukraine, Bulgaria), while taking into consideration the cultural characteristics of the cultures involved. The research questions asked in the research process were as follows:

Q1: What are the characteristics of the admins' social and content-creating activities in the East European versions of Wikipedia chosen?

Q2: Are tenure, social and content-creating activities of admins in the East European versions of Wikipedia chosen culturally dependent? If so, what cultural dimensions are correlated with their activities and tenure?

The method used in the research is the content analysis method, which included quantitative tools. The calculations were made on a sample of 259 users – the admins from seven language versions of Wikipedia. At the first stage of the research, the candidates lists were collected from the selected Wikipedia of seven language versions. The following number of admins from particular countries was studied: Poland –97 Slovenia –21 Hungary –23 Czech –32, Romania –15, Bulgaria –23 Ukraine -48 , in sum –259 admins.

Then, the *xTools* tool was used to generate the data about the activity of the admins. *XTools* collects statistical data for each registered account on Wikipedia and its related projects. The collected data included the following:

- the number of deleted editions of the admin,
- the number of editions deleted by the admins,
- the number of all editions made by the admin in Wikipedia,
- the number of activities in article space concerning the creation of the articles' content,
- the number of activities in the "talk" and "meta" space (discussing the content and quality of articles; interaction with others, as well as the organization of work),
- date of registration of the admin,
- date of the last activity of the admin,
- number of times thanks was expressed to the admin for his/her input,
- number of times thanks was expressed by the admin to other users.

Deletionism will be understood in this article as defined in Wikipedia, namely: the philosophy of: "selective coverage and removal of articles seen as poorly defended. Deletionist viewpoints are commonly motivated by a desire for Wikipedia to be focused on and cover significant topics, along with the desire to place a firm cap upon the proliferation of promotional use, trivia, and articles which are, in their opinion, of no general interest, the lack of suitable source material for high-quality coverage, are too short or otherwise unacceptably poor in quality, or may cause maintenance overload to the community" (https://en.wikipedia.org/wiki/Deletionism_and_inclusionism_in_Wikipedia). The proportion of editions deleted by and admin to the number of users in a language version, as well as the percentage of deleted editions of an admin may be treated as the indicators of deletionism in a given Wikipedia language version. The proportion of the sum of all activities concerning the admin's work to the number of active users may represent an indicator of the admin's general activity. The quotients with the number of people in the denominator were counted to take into consideration the variable of the size of a particular Wikipedia community. The proportion of social activities (in talk/discussions/"meta" spaces) to sum of article editions in Wikipedia was also calculated, as well as the proportion of the number of expressions of thanks to the sum of all editions of an admin as characteristics of social activity of the admins. Article space editions of an admin was treated as an indicator of the content-oriented activity of an admin. The tenure/seniority of an admin was determined by calculating the difference between his/her first and last edition (in terms of years).

At the second stage of the research, the data was collected and statistically analysed using Statistica software. The Rho-Spearman statistical measure of correlation between variables was used (with the adopted $p < 0.05$). Descriptive statistics were also used to investigate the main trends in the behaviour of admins in different Wikipedia language versions.

4. Research Results and Discussion

In order to answer the research questions, the descriptive statistics concerning the studied variables were analysed. The Spearman's rho correlation was calculated between the tenure of admins in all researched versions and their social activity, the percentage of deleted editions, expressions of thanks received, article editions and Hofstede cultural dimensions (Table 1). Only uncertainty avoidance did not correlate with the tenure of an admin.

Table 1: Correlations between tenure and chosen indicators of admins' activity

	Social Activities No./Sum Of Articles Editions	Percent age Of Deleted Editions	Thanks No./ Sum Of All Editions	Article Editions In The Space: Article (Content Activity)	Pd	Ind	Masc	Ua	Lo	Indulg
<i>tenure</i>	0.1435	0.2828	-0.5048	0.17242	-0.1332	-0.1905	0.1939	-0.0935	-0.2399	0.2038

N=259, $p < 0.05$. PD – power distance, Ind – individualism, Masc – masculinity, UA – uncertainty avoidance, LO – long-term orientation, Indulg– indulgence.

The indicators of the admin’s activity (relation of the entire sum of editions to the number of active users of a language version) and the level of deletionism were developed for each language version of Wikipedia. The average tenure of an admin was also calculated (Table 2).

Table 2: Average tenure, activity and deletionism in the seven East European language versions of Wikipedia. Activities concerned admins’ work from the period of the last 12 months (III 2023 – III 2024)

Language version of Wikipedia	Average tenure (in years)	Activity (sum of all editions /active users no.)	Deletionism (sum of deleted editions/ active users no.)	Social activities no./sum of articles’ editions
1. Poland	16.36	1.43	1.18	70.79
2. Slovenia	15.14	0.92	0.71	23.22
3. Hungary	15.30	0.78	0.61	66.92
4. Czech Republic	12.94	0.60	0.27	41.52
5. Romania	15.27	1.01	0.82	55.04
6. Bulgaria	16.43	0.65	0.39	0.29
7. Ukraine	12.54	1.08	0.87	34.72

N=259, p<0,05

The average tenure of an admin is similar for the majority of versions (15-16 years) – two are distinct from the rest, namely the Czech and Ukrainian ones (12-13 years).The highest level of activity is characteristic of the Polish, Romanian and Ukrainian versions, while the lowest – the Czech one. The highest deletionism is in the Polish version, while the lowest is in the Czech one. Subsequently, admins’ activity (activities concerning admins’ work) from all seven countries in sum and each country separately in the period of the last 12 months were calculated (Figure 2).

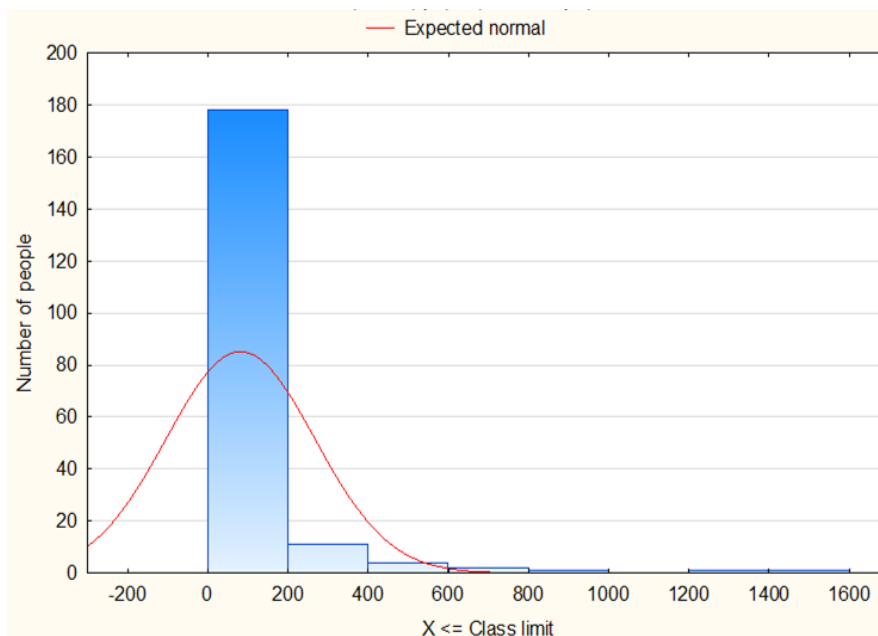


Figure 2: Admins’ activity from all seven countries in sum and each country separately in the period of the last 12 months (III 2023 – III 2024)

As indicated in the diagram, the majority of admins conducts between 0-200 admin activities a year, in which the highest activity is performed by the minority of admins. Similarly, admins’ activity from Poland, Slovenia and Bulgaria in the period of the last 12 months was calculated (Figure 3).

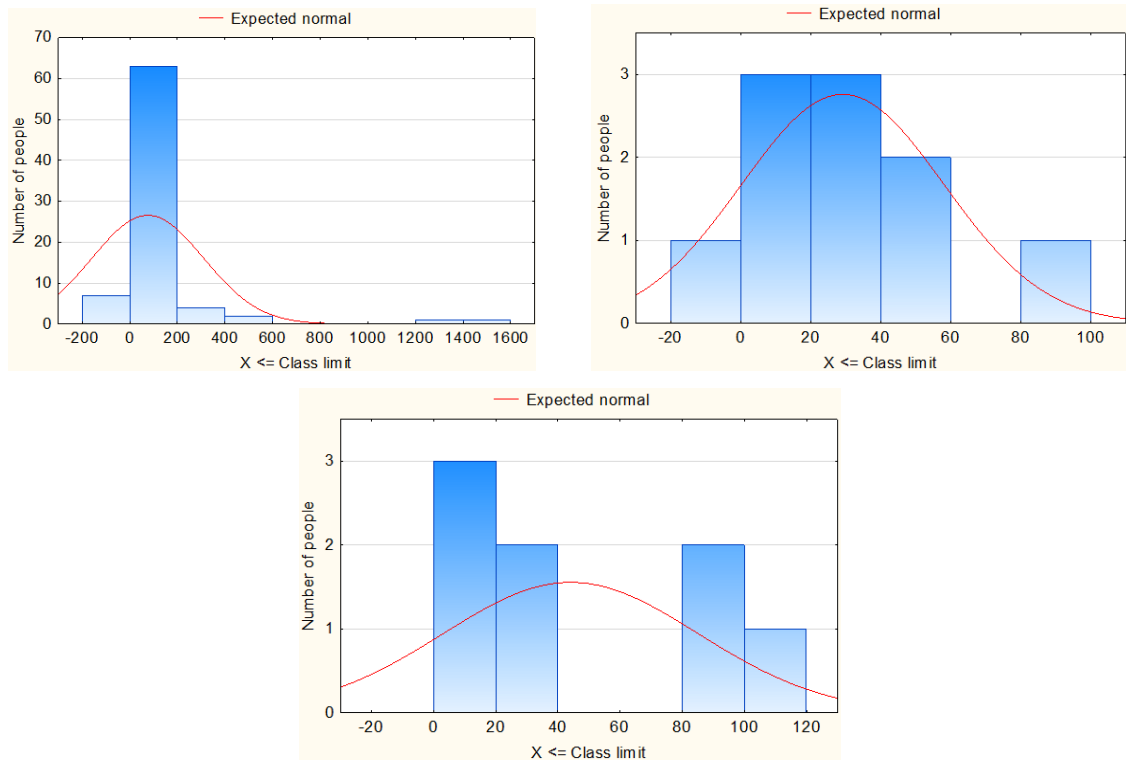


Figure 3: Admins’ activity from Poland, Slovenia and Bulgaria (from left to right) in the period of the last 12 months (III 2023 – III 2024)

It turns out that in the countries with smaller numbers of admins, the work and responsibility are distributed more evenly than in the countries with relatively higher number of admins.

The descriptive statistics concerning admins’ activity in the period of the last 12 months– all seven countries in sum and individually were prepared, while the mean, median and quartiles of the number of created articles were also determined.

Table 3: Descriptive statistics describing admins’ activity in the period of the last 12 months– all seven countries in sum and individually

Language version of Wikipedia	Mean	Median	Minimum	Maximum	Lower quartile	Upper quartile	SD
1. Admins’ activity in the last 12 months period (from all 7 studied versions)	81.49	16.50	1	1482	3	74	185.53
2. Poland	91.33	14	1	1482	4	52	242.27
3. Slovenia	38	35.50	1	101	2	68	36.89
4. Hungary	81.83	13.50	1	456	5	142	130.37
5. Czech Republic	55.36	16	1	310	4	82.50	77.88
6. Romania	79	17	1	732	4	64	190.23
7. Bulgaria	74.50	63.50	7	162	28.50	121.50	56.79
8. Ukraine	93.02	16.50	1	858	2	114	174.74

N=259, p<0,05

As indicated in the calculations, some countries are characterized with increased levels of average admins’ activity (Poland, Ukraine), while some are placed below the average (the Czech Republic, Slovenia). The highest median of activity was in turn displayed by Bulgaria. The complete data are presented in Table 3.

There were no statistically significant correlations observed between cultural dimensions and content-oriented activity. Power distance correlated with deletionism, social activities no., and the proportion of social activities

no. to article editing. Long-term orientation correlated with three variables: deletionism, expression of thanks, and social activities no. Uncertainty avoidance correlated only with the proportion of social activities no. to article editing, and masculinity with the proportion of social activities no. to article editing, deletionism, and social activities no. The more individualized and long-term oriented culture was, the more thanks were expressed per edition. The lower power distance, individuality, and femininity characterised a culture, the more deletionism was in its version of Wikipedia. All correlations are presented in Table 4.

Table 4: Correlations of Spearman’s rho between cultural dimensions of Hofstede and social and content-oriented activity of admins

Hofstede cultural dimensions	Social activities no./ Sum of articles’ editions	Deletionism (average percentage of deleted editions)	Expression of thanks (thanks/sum of all editions)	Editions in the space: article (content-oriented)	Social activities no.
1. PD	-0.56727	-0.48102	-0.12165	-0.02418	-0.16130
2. Indiv	-0.28559	-0.74024	0.14343	-0.08670	-0.09231
3. Masc	0.42138	0.79939	0.01982	0.08244	0.23033
4. UA	-0.47857	0.05437	0.00430	0.03774	-0.03732
5. LO	0.10714	-0.54779	0.24931	-0.06864	-0.20248
6. Indulg	0.01468	0.18698	-0.18057	-0.01672	0.04608

N=259, p<0,05

Pfeil et al. (2006) indicates that culture influences numerous web behaviours of Wikipedia users, e.g. high power distance decreases deleting activity, while individualism facilitates adding and corrective actions. High uncertainty avoidance would have a negative impact on the total contributions of all these three types of activities. In this study, only masculinity correlation confirmed the expectation. Orientation towards success and effects, typical of more masculine cultures facilitates making more deletions. Contrary to the Pfeil study, in terms of administrators, both levels of PD and individualism decreased the level of deletions made to the admins’ editions. This may be explained by potential intimidation before correcting someone who has got some “power” in the community. Social activities were positively correlated with masculinity and negatively correlated with power distance and long-term orientation. The third hypothesis was only partly confirmed.

Teng et al. (2022) in their study of Bahamut community administrators concluded that taking on a social role of an administrator helps to initiate the role-appropriate behaviour of opinion leadership and public space contribution rather than private space contribution. As results from the conducted study in the space of Wikipedia, the administrators in South Eastern European versions of Wikipedia take public responsibility for the community and their proportion of social activity editions to all editions is high (with the exception of one version). However, they do not abandon the content contribution and continue to create articles. Their content-oriented activity does not seem to be culturally dependent, thus it may be oriented towards the common ethos of work to the benefit of Wikipedia. The fourth hypothesis was rejected.

Taking up an administrator’s role may be connected with expecting peers’ recognition, whereas in Wikipedia this role is respected by the users, which is a socio-psychological form of reward for the efforts for the community (Kuznetsov 2006, p.5). The longer the tenure of an admin, the higher the level of social engagement observed. Likewise, the longer the tenure, the higher the contribution to the content of Wikipedia. Moreover, in more masculine cultures the tenure tends to be longer. The first hypothesis was confirmed and the latter was partly confirmed (only uncertainty avoidance was not correlated with tenure). More experienced editors see Wikipedia not only as a set of articles, but also as a community of editors, so are more likely to admit to social and community factors as important motivators to contribute (Baytiyeh and Pfaffman 2009). Wikipedia administrators place great value on social motivations and the creation of Wikipedia articles as public artefacts comparing to other aspects of their activity.

Research by Picot-Clémente, Bothorel, and Jullien (2015) emphasizes the significance of contribution quality and peer recognition in the admin selection process. In the space of Wikipedia, 80% of contributions are made by only 2.4% of users (Crowston, Fagnot, 2018, p. 90). Similarly in the results of this study, the highest number of

editions are performed by the minority of admins. However, it turned out that in the countries with smaller numbers of admins, both the work and responsibility are distributed more evenly than in the countries with relatively higher numbers of admins, where the responsibility may be dispersed.

5. Conclusion

This study focused on determining how different types of admins' contributions are influenced by particular cultural factors and what kinds of contributions are shaped by cultural context. Based on the data that the author collected, it appears that the tenure of an admin is correlated with his/her social activity and content activity. The more experienced the admin is, the more active he/she is in both spheres. When analyzing how contributions are shaped by cultural context, there are a few aspects that we determined. Firstly, the tenure of admins is correlated with all cultural dimensions, except uncertainty avoidance. While social activity, including expressing thanks for contributions and making deletions are at least partly culturally dependent, the content-oriented activity did not correlate with any of Hofstede cultural dimensions. While analyzing the data, the author found unexpected results, particularly relating to the fact that in Wikipedia versions with fewer administrators, there is a trend towards a more equitable distribution of work and responsibilities compared to countries with a larger administrative group. This results in a potentially more balanced dispersion of responsibilities across administrators.

The conclusions from the study may be of interest to the administrators of volunteer virtual communities, where the engagement and contributions of participants may be unstable and varied, while also not remunerated. Organization of this type of communities of practice is specific and different from typical virtual teams. It is also varied in terms of cultures engaged in knowledge creation. The administrators or managers could adapt to different conditions in terms of their quality-oriented activity (such as deleting/correcting participant contribution) or motivating activity (such as thanks offered for the contribution). The community could also put forward a subject of discussion regarding the length of administrators' rights and number of administrators, as it may have an influence on the activity and division of responsibilities between admins. Additionally, future analysis of a wider group of language versions of Wikipedia would help in understanding the cultural conditioning of management and organization of work better in virtual communities of practice.

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