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## THE ROLE OF SOCIAL MEDIA IN SCIENCE

Marija Arapović, Valentina Novak, Nikolina Zaplatic Degač

University North, University Center Varaždin, 104th Brigade Street 3, 42000, Varaždin, Republic of Croatia

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### ABSTRACT

Social media platforms provide direct access to a vast amount of information, enabling the promotion of various content. It has become a new way of disseminating news worldwide and often influence social perception and public discourse development. Even scientists are not oblivious to the trend of using social media. Social media allows them to quickly and effectively share their research results with the global audience. Numerous studies indicate that scientists are increasingly participating in public discussions and activities on social media, with nearly half of academic researchers being a part of at least one social network. Media professionals have traditionally been the guardians of scientific information, but new media technologies grant scientists more power than ever to proactively engage in public communication. Many studies also suggest that most scientists consider media visibility important and see responding to journalists as a professional obligation, a stance endorsed by many universities and scientific organizations.

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Person for correspondence:

Marija Arapović, mag. med. techn., PhD student

Email: [marapovic@unin.hr](mailto:marapovic@unin.hr)

## INTRODUCTION

Social media platforms provide direct access to a vast amount of information, thereby facilitating the promotion of diverse content. They have become a new means of disseminating news worldwide and often have a significant impact on shaping social perceptions and fostering public discourse (1). Users of social media platforms tend to seek information that aligns with their beliefs and often disregard information that contradicts their views. Various studies have shown that false news and inaccurate information can spread even faster than fact-based news (2). As the importance of social media for acquiring scientific information continues to rise, questions arise regarding whether online platforms enhance or diminish public trust in science. Moreover, even for scientists, the trend of using social media is not unfamiliar. Social media platforms have enabled them to swiftly and efficiently disseminate the results of their research worldwide. Thus, not only do scientists want to utilize social media for presenting their research, but in many cases, they must do so if they wish their research to gain recognition (3).

### Academic Social Networks

In recent years, the use of social media for professional purposes has become increasingly common, serving as a tool for

communication and information sharing. Among the most prominent platforms is LinkedIn, with its primary aim of enhancing business relationships, advancing careers, and facilitating employee recruitment, among other functions. Additionally, there are significant academic social networks such as Academia.edu and ResearchGate. These platforms encompass the typical features of social networks, including personal profiles, and they offer the opportunity for interaction with colleagues. Furthermore, they provide specific tools tailored to academic needs, such as article publication and citation tracking.

Academic social network platforms also offer various capabilities, including:

- Sharing ideas, suggestions, and professional experiences
- Publishing scientific and professional articles
- Receiving direct notifications via email when a relevant article is published
- Comparing influence in the scientific community, as it is gauged by the number of citations of scientific papers and the quality of journals in which the work is published. Academic social networks also incorporate data on

the number of downloads, readings, or shares of scientific work (4).

### Use of Social Media by Scientists

Social media provide innovative communication channels and formats and, in the long term, can fundamentally transform the relationship between science and society (5). Numerous studies on this topic indicate that scientists are increasingly participating in public debates and activities on social media, with almost half of academic researchers being part of at least one social network. On the other hand, research conducted at the University of Michigan points to the fact that 60% of scientists use traditional channels, such as television programs, radio shows, and the like, to disseminate information. Additionally, nearly 40% of respondents stated that they would never use social media platforms like Twitter, Facebook, or Instagram for academic or professional work and development. In Wilkinson's study, scientists were surveyed, of which 73% had never used Twitter, 64% had never used blogs, and 51% had never used online news forums. In the age of the internet, social media offer scientists a powerful means to enhance their professional profiles and serve as voices for science (6). The types of online discussions can vary significantly, with scientists increasingly

using social media to share articles from journals, promote scientific opinions, and spread information about professional opportunities and upcoming scientific events. A growing body of evidence suggests that public visibility and constructive discussions on social media can be highly beneficial for scientists (7). Many scientists and scientific institutions aim to inform the public about potentially dangerous misconceptions and counteract the spread of misinformation, which is often prevalent on social media (8). In fact, research shows alarming deficiencies in the general public's understanding of basic scientific facts, as highlighted in one study this year. For example, the results indicate that only 9% of respondents understand the meaning of antibiotic resistance, while 31% believe that their own bodies have become resistant to antibiotics. This data underscores the significant need for public education on important scientific concepts, raising the question of whether the issue lies with scientists, journalists, or the public itself (9). The relationship between scientists and journalists has evolved in recent years with the emergence of numerous sociocultural changes and significant shifts within the media ecosystem (10). Media professionals have traditionally been the custodians of scientific information, but new media

technologies empower scientists more than ever to be proactive in their public communication (11). Additionally, numerous studies indicate that the majority of scientists consider media visibility to be highly important, and responding to journalists is a professional obligation – a view supported by a significant number of universities and other scientific organizations (12). As for the Republic of Croatia, the popularization of science, spreading scientific knowledge among the broader public, is not prevalent enough. In other countries, such as the United Kingdom, state funds that finance scientific research allocate additional resources (up to 3% of the total amount) for projects if researchers document their efforts to communicate the results of their research to the general public. The popularization of science should be recognized as a national interest and an obligation of institutions, and it should involve the mandatory sharing of scientific information that is essential for the general public. However, there has been an increasing effort in recent times to popularize science in the Republic of Croatia. Institutes are more frequently organizing "open days," the media reports on scientific news, and various scientific events are held. From the above, several issues arise. The primary issue is the insufficient support from state institutions

for the popularization of science (13). On the other hand, responsibility also lies with researchers and scientists, who should actively work to convey their research findings to the broader public through accessible reports and communication (14). Social media serves as a platform for virtually connecting a large number of people from different countries. This enables researchers to access a diverse and global population that can participate in research and accelerates the collection of scientific data. It also facilitates international collaboration among scientists (15). Social media allows the monitoring of global trends, moods, and events worldwide, which is a benefit for researching and analyzing social changes (16).

#### **Social Media as an Educational Platform**

Social media enhances communication and interaction among people in general, particularly between teachers and students. It has been confirmed that social media is an effective way to promote student engagement because it allows introverted individuals to share their ideas and opinions more comfortably. An additional educational benefit of social media is that it facilitates easier communication and provides teachers and students with a centralized hub to unite their ideas and

opinions, share educational content, and more (16). On the other hand, there are negative aspects to using social media. Students can easily develop an addiction to social media, which can lead to reduced social interaction. If this happens, it often results in psychological disorders in individuals, as well as potential concentration and memory issues and reduced attachment (17). Social media has become an indispensable part of today's work and leisure world to the extent that its effective potential for collaboration has become a science in itself. Nevertheless, at least when it comes to external communication, many scientists still hesitate to accept different channels, either out of fear of negative media attention or due to a lack of time. Some researchers have even withdrawn from social media, not necessarily because they had negative experiences, but due to disappointment with some of the negative aspects that are prevalent. However, a clear example of how social media has enabled and facilitated collaborative research is undoubtedly the COVID-19 pandemic and its lockdowns, which further spurred the acceptance and use of social media (18). It is considered that digital infrastructure in Europe is highly advanced, with households, schools, and universities generally having access to the internet. It is estimated that around the

world, as many as 826 million young people do not have access to a computer in their households during their education, and 56 million do not have access to a 3G or 4G network. Particularly during the COVID-19 pandemic, these students found it very difficult, even impossible, to participate in classes without internet access. Furthermore, as much as 82.2% of the population in Africa lacks access to the internet altogether (19).

## CONCLUSION

Social media is treated as a significant addition to the modern world, with a greater impact on bringing people together and providing information. It is increasingly clear that social media is not going away and will continue to connect people. For these reasons, the scientific community should embrace social media. Science is often intertwined with key public issues facing the world. Furthermore, communication among scientists is considered as necessary as active participation on social platforms so that the public can make informed decisions that are in the best interest of society. Given that an increasing number of people spend time on social media every day, scientists can use these platforms to encourage new generations to engage in scientific activities. This will promote education and

learning, allowing them to become scientists themselves one day.

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## ULOGA DRUŠTVENIH MEDIJA U ZNANOSTI

Marija Arapović, Valentina Novak, Nikolina Zaplatic Degač

Sveučilište Sjever, Sveučilišni Centar Varaždin, Ulica 104. brigade 3, 42000, Varaždin, Republika Hrvatska

### SAŽETAK

Platforme društvenih medija pružaju izravan pristup velikoj količini informacija, a samim time omogućavaju i olakšavaju promociju različitog sadržaja. Novi su način prijenosa vijesti širom svijeta te vrlo često utječe na izgradnju društvene percepcije kao i na razvoj javne rasprave. Čak ni znanstvenicima trend uporabe društvenih medija nije nepoznat. Društveni mediji omogućili su im brzo i učinkovito prenošenje rezultata svojih istraživanja diljem svijeta. Mnoga istraživanja na ovu tematiku govore da znanstvenici sve češće sudjeluju u javnim raspravama i aktivnostima na društvenim mrežama te da je gotovo polovica akademskih znanstvenika dio barem jedne društvene mreže. Medijski profesionalci tradicionalno su bili čuvari znanstvenih informacija, ali nove medijske tehnologije daju znanstvenicima veću moć nego ikada prije da budu proaktivni u svojoj javnoj komunikaciji. Također, mnoga istraživanja govore da većina znanstvenika smatra da je prepoznatljivost u medijima jako važna te da je odgovaranje novinarima profesionalna dužnost – stav koji zastupa veliki broj sveučilišta i drugih znanstvenih organizacija.

**Ključne riječi:** uloga, društveni mediji, znanost

Osoba za razmjenu informacija:

Marija Arapović, mag. med. techn.,

Email: [marapovic@unin.hr](mailto:marapovic@unin.hr)