

Academicians' awareness, attitude, and use of open access during the COVID-19 pandemic

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Abstract

The aim of this research is to reveal academics' awareness, attitude, and use of open access. In line with the research purpose, the survey research design is adopted. This research consists 151 academics from 12 basic research areas; eight of them being Professor Dr, 17 being Associate Professor Dr, 49 being Doctor Lecturer, and 77 being Research Assistant or Lecturer. A questionnaire consisting of 19 open access and five demographic information questions was used for the data collection tool. The research results show that 75% of the academics have open access awareness and that their awareness is generally created by information that they obtain through the Internet and their friends. In addition, most of the academics indicate that their awareness of open access has increased during the pandemic period. When considering the level of academics' use of open access, it is found that 75% of the academics use articles in open access journals for their own research and 51% of the academics do not publish any articles in open access journals.

Keywords

Academicians, attitude, awareness, open access, use

Introduction

Academics fulfill their responsibility of producing scientific knowledge through scholarly publications. The main function of scholarly publishing is to archive by informing scientists about scholarly research results, where the principle of quality is assured by referees (Kim, 2001). Scientists should closely follow current developments in their fields of study for the emergence of scholarly publications. The fact that scientists, who are the producer, controller, and consumer of scientific knowledge, always purchase scholarly publications they need, while producing science contradicts the principle of science "universalism" (Polat, 2006). Open science practices introduced at the beginning of the 17th century can be evaluated as a solution to this contradiction (Bartling and Friesike, 2014). Furthermore, in the classification of open science

developed by Neuhold (2014), there are open access, open educational sources, open peer-review, open book, open source, and open data applications. Among these applications, "open access" is particularly important for scholarly research.

Open access is a form of scholarly publishing where scientific knowledge is free of charge to everyone (Shieber, 2009; Suber, 2012). It affects scholarly research in terms of different dimensions. One of these is the impact factor revealed by scholarly research. Scientists expect that their scholarly research results will be used by different

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researchers and that it will contribute to their field of study. This situation reveals the impact of scholarly research. Therefore, scholarly research with open access satisfies the expectations of scientists (McCabe and Snyder, 2014; Wagner, 2014) by achieving more citations (Swan and Brown, 2004). One of the reasons is that open access significantly increases the visibility of scholarly research. Furthermore, Swan and Brown (2004) express that non-open access electronic journals reduce the number of readers and Smith et al. (2017) express that open access enables scholarly research results to reach a wider readership. The citation number and impact of research whose visibility increases have inherently increased. In addition, scholarly communication is another dimension affected by open access. It is a process that extends from the production of information to its delivery to the user (Uçak, 2009). According to Vicente-Sáez and Martínez-Fuente (2018), information, which is accessed by everyone and shared and developed cooperatively, is targeted in the open access approach. Therefore, open access increases the speed of scholarly communication, especially with the use of digital technologies (Wilkinson et al., 2016).

Literature review

Open access

The digital transformation in scholarly publication, thanks to information and communication technologies, has revealed a new approach which freely offers faster access to scholarly research (Karabulut, 2015; Willinsky, 2006). This practice, which is explained as open access in the literature, is initially on an individual basis, and then transformed into an alternative publication.

Open access refers to providing free access to scholarly publications or archiving a copy of these publications in online repositories (Köse and Küçük, 2010). Since the public purchases scholarly research results that they support by paying more money, it can be seen as the main reason for the emergence of the open access concept (Oktar and Akdal, 2006). Even though open access starts to be implemented with the spread of information and communication technologies, open access has been widely accepted as a concept since 2002 (Suber, 2003).

Beyond individual attempts at the production of knowledge and free access to scientific knowledge, there have been three important attempts to address open access as a whole and make it systematic. The first is the Budapest Open Access Initiative in 2002. Accordingly, open access is defined as allowing the use for purposes, such as reading, downloading, copying, and distributing the full texts of articles resulting from scholarly research (Budapest Open Access Initiative, 2002). Any user can freely access these articles provided that the author is properly cited. During meetings in Bethesda and Berlin, when the issue of

open access was examined, it was defined by declarations that complete each other, and due precautions to be taken for its development were emphasized (Kayaoğlu, 2006). These declarations, known as “BBB” (Budapest, Bethesda, Berlin) in the literature, outline the principles of open access and they can be seen as a reference for subsequent applications (Velterop, 2005). The following three main points revealed in these declarations are given below:

1. Readers can have free and unrestricted access to scholarly research using the Internet or other tools.
2. The author of scholarly research irrevocably gives the right to use, copy, or disseminate their research to third persons previously and permanently, if they are correctly cited.
3. Scholarly research is kept in at least a common and internationally accepted open access repository, which is committed to long-term protection.

As a result of research on open access, two different methods have emerged. These methods are the gold route and the green route. While the gold route refers to open access publishing, the green route refers to self-archiving. In the golden route, being one of the open access models, scholarly research is available online to all readers as soon as they are published in a peer-reviewed journal. Since all scholarly research on the golden route is simultaneously shared as open access, the need to subscribe to scholarly journals is eliminated. However, a need for resources, in order to meet the referee and editorial expenses, has emerged. The different methods can be followed to meet these expenses. First, systems that universities contain within themselves are used, and the peer-review and editing process is carried out by academics at universities. The second is to agree with sponsors regarding expenses. The third is commercial publishing, where authors charge a certain fee for the publication of their research and these fees are then used for publication expenses. A number of open access systems simultaneously use several of these methods.

Another open access method is the green route. A copy of the research accepted for publication in the green route is freely accessed on institutional repositories. The green route does not change the method of publishing which is used nowadays. It merely gives to authors the right to publish their research in any institutional repositories or on personal web pages. Many open archives around the world use the green route method. Dspace and ePrints are examples of this. Therefore, many organizations create their own open archives using these platforms. Making them freely available and allowing search engines access are a few of the reasons that these platforms are preferred (Swan and Brown, 2004). Also, “In 2016, the EU Ministers of science and innovation, assembled in the Competitiveness Council, resolved that all European scientific publications

should be immediately accessible by 2020” (Plan, 2018). In this context, Plan S was initiated by the Open Access Envoy of the European Commission. Plan S, in which the European Commission and the European Research Council also participate, is supported for open access models with no publication fees.

Open access practices

There are certain obstacles to the spread of open access practices. One of them is scientists’ lack of interest. Researchers avoid publishing their research in open access journals. The reason is that researchers pay attention to the prestige of journals, while publishing their scholarly research (Wijewickrema and Petras, 2017) and they think that open access journals have lower prestige than other journals (Swan and Brown, 2004). However, this perception has started to change in recent years. With the development of information and communication technologies, open access practices have become increasingly common all over the world. Many scholarly journals are published as open access, and there is an increasing interest in open access journals. More citations to the research in open access journals are one of the main reasons for this interest (Hajjem et al., 2005; McCabe and Snyder, 2014; Wagner, 2014). The other factor is the increasingly widespread use of open access institutional repositories around the world. According to the statistical data of OpenDOAR (2020), there are more than 5.500 open archive systems worldwide.

The first open archive in Turkey was created by Yaşar Tonta at Hacettepe University (Tonta and Ertürk, 2005). While the concept of open access has become a primary issue throughout the world, due to its high subscription pricing and increasing numbers publishing, it has taken place in Turkey’s agenda later than in that of other countries (Karasözen et al., 2010). In 2019, the Council of Higher Education (CoHE) established the Open Access and Open Science Works, which include researchers from many different fields of study in academia. In addition, the Scientific and Technological Research Council of Turkey (TUBITAK) has adopted the green open access method in the open access policy accepted in 2019, and it has approved its implementation in all support programs since 2020 (TAB, 2020). In addition, DergiPark, which has been developed with the support of TUBITAK ULAKBİM, aims to increase the presence of national academic journals by providing open access to research results and to increase their international visibility (DergiPark, 2019). The TUBITAK Open Archive Aperta proposes free availability of scholarly publications without any financial, legal, and technical barriers on the Internet, allowing any users to access, read, download, copy, print, or link to the full texts of the articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose.

Although open access practices are new in Turkey, their development continues around the world. Innovation need not be a previously unknown term; however, it is sufficient that it has not been not used earlier (Berger, 2005). Furthermore, innovation can be new ways to perceive problems and needs, as well as for developing different solutions to perceived problems and needs (Rogers, 1995). Theories and models, which aim to reveal factors affecting the adoption of innovation by society, have been developed. The diffusion of innovation (DOI) theory, developed by E. M. Rogers, is one of these, and is based on the following four basic elements: innovation, communication channels, time, and social system (Rogers, 2003).

Innovation is an idea, an application, or an object perceived as new by individuals or the adopters (Rogers, 2003). When open access is evaluated according to the diffusion of innovation theory, who uses open access, at what speed they adopt it, and the communication channels used to reach the target audience become more of an issue. Diffusion of innovation is a process rather than an instant event, as well as choosing the right communication channel, and is decisive for the diffusion of innovation. Social system is defined as a community of interrelated units that contribute to the problem-solving process in order to achieve a common goal (Everett, 1983). Since the social system determines the target audience for innovation, it has great importance in the diffusion of innovation theory. In this context, governmental bodies which develop policies, scientific organizations, scientists, publishers, and libraries have been evaluated as part of the social system. The social system can affect the diffusion of innovation positively or negatively (Rogers, 2003).

Research questions

It can be seen that there have been considerable steps taken in the context of open access in Turkey and around the world. In Turkey, there is a need for new policies to increase sources which meet the concept of open access and which promote the use of open access sources. Getting support from academics who are a part of the social system and who are important stakeholders of open access policies is important for developed policies to be successful. Open access awareness should first be created in order to get support from academics regarding this issue. Indeed, the fact that academics are not aware of any research related to open access prevents the effective use of the developed systems (Köse and Küçük, 2010). Studies conducted have shown that one out of every two academics has awareness of open access (Ertürk and Küçük, 2010; Köse and Küçük, 2010). According to the Research Data Management Survey Report, generated by TUBITAK with academics, 61.5% of the participants keep produced or used data on their local computer. However, the rate of participants who use open archives (i.e. commercial

databases, open access repositories, and institutional archives) as data archives is only 7% (TUBİTAK, 2018). Even though 71% of the participants cite research in their open archives, they appear hesitant about archiving their own research in such archives.

The lack of awareness and knowledge regarding open access also creates prejudices against open access. The thought that an increasing number of publications along with open access, will decrease the quality of the peer-review process is one of the prejudices (Swan and Brown, 2004). Open access to scientific data also raises concerns on certain issues, such as the protection of public interest, national security, personal privacy, and intellectual property rights (NRC, 1997). However, open access methods, adopted within the framework of certain policies and laws, provide reasonable solutions to many of the problems that may occur. Moreover, the subscription pricing which is paid to scholarly journals has increased considerably in recent years. Greenberg (2015) reports that the share allocated to scholarly journals in library budgets in the United States has increased by 400% in the last 25 years. Therefore, many countries develop policies on open access due to the increased costs and to make scholarly communication faster. Sweden, one of these countries, aims to transfer its scientific practices to open access by 2026 (Mynewsdesk, 2018).

The obtained research results show how important open access is in the context of scholarly research. In addition, academics' awareness of open access is of critical importance for the dissemination and use of open access practices (Serrano-Vicente et al., 2016). In the literature, there is no current research which entirely addresses open access in the context of awareness, attitudes, and use. Therefore, this research aims to reveal academics' awareness, attitudes, and use of open access. In line with the research purpose, the answers to the following questions are sought:

RQ1. What is the level of academics' awareness of open access?

RQ2. What is the level of academics' use of open access?

RQ3. What is the level of academics' attitudes toward open access?

Method

Research design

In this research, the survey research design is adopted to reveal academics' awareness, attitudes, and use of open access. Survey research is a quantitative method which is widely used in social sciences to determine the views and attitudes of individuals toward a particular phenomenon or event (Muijs, 2010).

Participants

The participants of the research were selected from academics with different academic titles and who conduct their studies in different research areas. This was organized in order to obtain more comprehensive and rich data regarding the research subject. Therefore, this research consists of 151 academics from 12 basic research areas, with eight of them being Professor Dr, 17 being Associate Professor Dr, 49 of them being Doctor Lecturer, and 77 of them being Research Assistant or Lecturer. Of the participants, 70 were female and 81 were male. With regard to the age distribution of the participants, 25 were between the ages of 20–30, 89 were between the ages of 31–40, 30 were between the ages of 41–50, and seven were between the ages of 51–60 years. Information regarding research areas and research experience of the participants is presented in Table 1.

According to Table 1, it can be seen that academics in the field of educational sciences and social human administrative sciences mostly participate in the research. In addition, it is determined that more than half of the academics participating in the research have 0–10 years of experience.

Research instrument

Research data were collected by way of a questionnaire, which is one of the most appropriate tools for survey research design (Büyüköztürk et al., 2019). The questionnaire, as a tool, is fast, and requires less effort and cost than others in the collection of data from large groups (Muijs, 2010). The questionnaire used in the research was developed based on the open access survey created by Sheikh (2019). The survey, which was created by Sheikh (2019), consists of four dimensions and 21 questions that illustrate demographic information, open access awareness, attitudes toward open access, and the use of open access. Within the scope of the research, 14 questions concerning awareness, attitude, and used in the questionnaire prepared by Sheikh (2019), were adapted into Turkish by the researchers. In the adaptation process, the procedural steps mentioned by Şeker and Gençdoğan (2006) were followed. In this regard, translation of the questionnaire by the researchers was checked by two language experts who were proficient in both English and Turkish. In line with the feedback of the linguists, two interrogative roots were arranged. The translation form of the questionnaire was translated back into English by two language experts who did not know the original version of the questionnaire. Therefore, the questionnaire created with the re-translation method was compared with the questions of the original questionnaire. As a result of the comparison, there appeared no difference between the interrogative roots and the items. Seven questions were added to the translation form of the questionnaire in order

Table 1. Participants' research areas and research experience.

Research areas	<i>f</i>	Research experience (years)	<i>f</i>
Educational sciences	44	0–5	30
Science and mathematics	11	6–10	63
Philology	3	11–15	33
Fine arts	10	16–20	11
Juridical sciences	3	21–25	7
Theology and religion	12	26–30	3
Architecture, planning, and surveying	3	31 and above	4
Engineering	11		
Health and medical science	17		
Social human administrative sciences	29		
Sport and physical education	7		
Agriculture, forestry, and natural environment	1		

to get the academics' opinions regarding open access institutional repositories and open access during the pandemic process. The draft form of the questionnaire, consisting of 21 questions was examined by two field experts in order to ensure content validity. In line with the feedback of the field experts, a pre-application form was prepared by adding new items to the items of the three questions translated from the original questionnaire. A pilot study was conducted by applying the pre-application form to 35 academics from various research areas. As a result of the pilot study, it was decided to remove the two questions translated from the original questionnaire in line with the feedback of the participants. After the revision, the form of the questionnaire, consisting of 19 open access and five demographic information questions, was finalized (Supplemental Appendix 1).

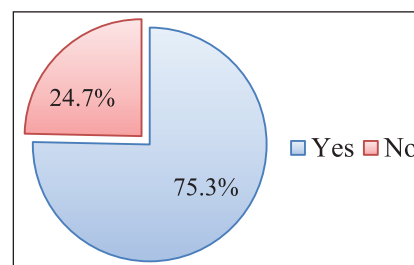
Data collection and data analysis

Within the scope of the research, the survey research design was carried out on the Internet due to its practicality and the COVID-19 pandemic process. Within this context, the developed questionnaire was transferred to Google Form. The survey web link was sent to academics working in the different fields of study at many universities through e-mail. As a result, the data collection process was completed within 2 months in 2020, without any data loss. The obtained data were analyzed using descriptive statistical techniques; mean, percentage, and frequency.

Results

The level of academics' awareness of open access (RQ1)

The first research question is to determine the level of academics' awareness of open access. In this context,

**Figure 1.** Academics' awareness of open access.

participants' awareness of open access was initially examined. The results are presented in Figure 1.

As illustrated in Figure 1, it can be seen that most of the academics who participated in the research (75.2%) had been aware of open access. Accordingly, how academics have knowledge of open access was examined. The results are presented in Figure 2.

It was determined that academics usually gained knowledge of open access through the Internet and their colleagues or friends (see Figure 2). Moreover, the level of awareness for open access concepts of academics (e.g. terms, resources and initiatives) was examined. The results are presented in Figure 3.

As illustrated in Figure 3, it was found that more than half of the academics have knowledge of concepts related to the "Open Access Journals and Directory of Open Access Journals" (DOAJ). In addition, it was determined that one out of every three academics has knowledge of concepts related to the "DOAB, Self-archiving, Gold Open Access model, Open Access Institutional Repositories, and OATD." The other concepts are mostly unknown or little known by academics. In addition, the impact of the pandemic process on academics' awareness of open access was also investigated within the scope of the research. The results are presented in Figure 4.

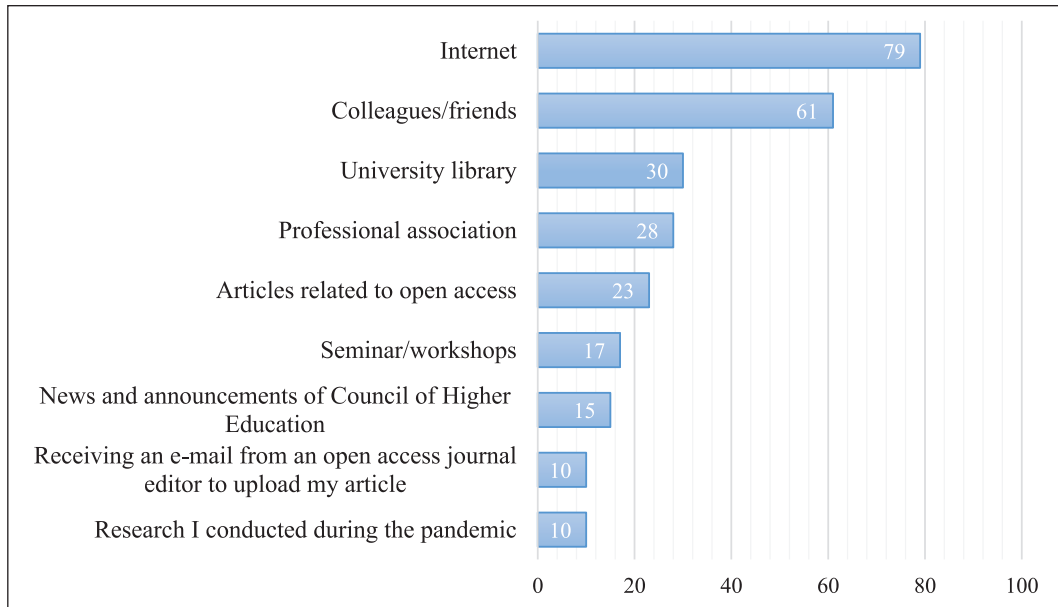


Figure 2. The methods by which academics gained knowledge of open access (f).

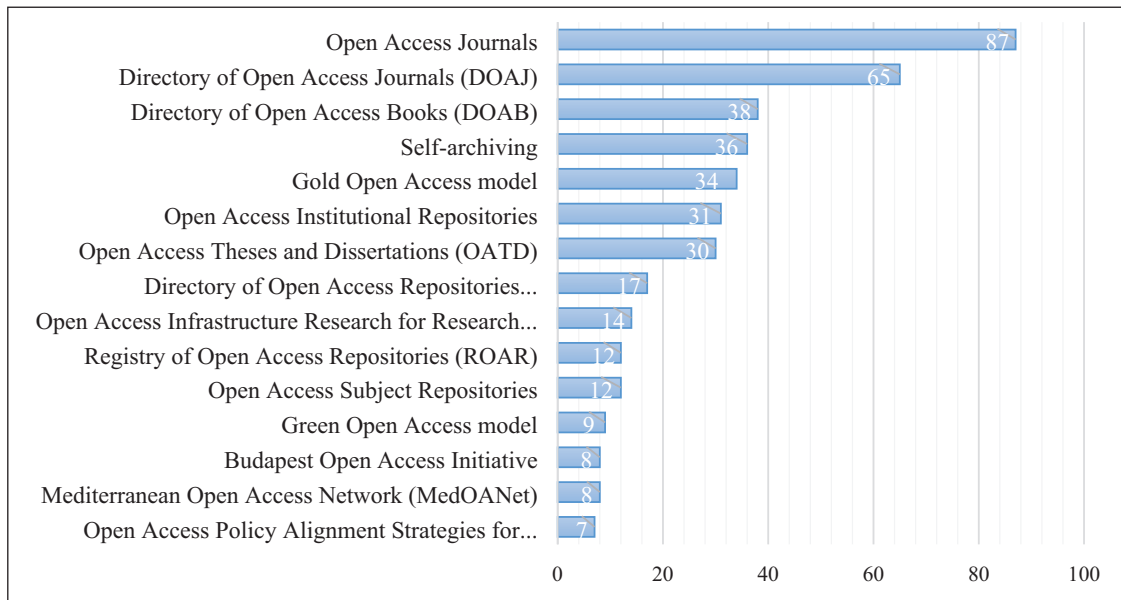


Figure 3. The known concepts of open access (f).

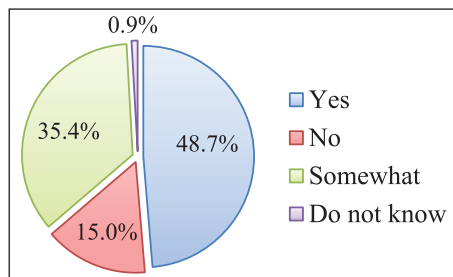


Figure 4. The impact of the pandemic process on academics' awareness of open access.

According to the obtained results, one out of every two academics (48.7%) indicates that their awareness of open access has increased during the pandemic process. One-third of the academics (35.4%) indicate that the pandemic process has only a partial effect.

The level of academics' use of open access (RQ2)

The second research question is to determine the level of academics' use of open access. In this context, academics'

use of articles published in open access journals for their own research was initially examined. The results are presented in Figure 5.

As illustrated in Figure 5, it can be seen that three out of the four academics use articles published in open access journals for their research. The rate of academics who do not use articles in open access journals for their own research is also determined to be 3.5%. The results related to the academics' responses in regard to publishing their own articles in open access journals are presented in Figure 6.

Although a majority of academics prefer to use articles in open access journals for their own research (see Figure 5), it was found that one out of every two

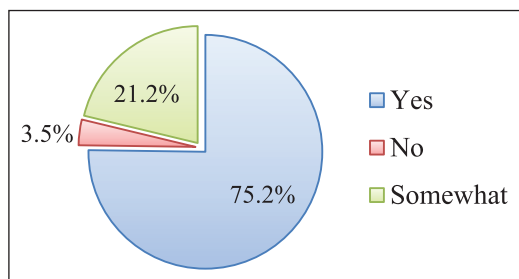


Figure 5. Academics' use of articles in open access journals.

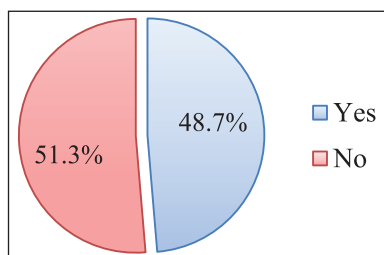


Figure 6. The academics' responses in regard to publishing articles in open access journals.

academics does not publish their own articles in open access journals. The results related to the reasons why academics do not publish their articles in an open access journal are presented in Figure 7.

As illustrated in Figure 7, it was determined that most of the academics do not publish their articles in open access journals because they are not sufficiently familiar with such journals in their field of study (see Figure 7). Moreover, the reasons why academics publishing in open access journals prefer open access journals are presented in Figure 8.

As illustrated in Figure 8, it can be seen that there are several reasons why academics publish their articles in open access journals. Among these reasons are the following; reasons a wider readership for publishing in the first three ranks, getting more citations for the research, and free access for all readers.

Open access institutional repositories play an important role in open access. For this reason, academics' use of open access institutional repositories is evaluated. To begin with, whether or not there are open access institutional repositories in their institutions where the academics worked was examined. The results are presented in Figure 9.

The results show that half of the academics (50.3%) do not know whether there is an open access institutional repository in their institutions (see Figure 9). Accordingly, academics' use of open access institutional repositories is presented in Figure 10.

The results show that 66.2% of the academics in the study do not use open access institutional repositories (see Figure 10). Furthermore, it was determined that academics' lack of knowledge about self-archiving (66%) was found to be in the first rank among the reasons for not using open access institutional repositories. It is revealed that there are several reasons why academics who add their research to the open access institutional repositories prefer this, such as getting their research results known faster (64.7%), keeping their research studies in a regular and

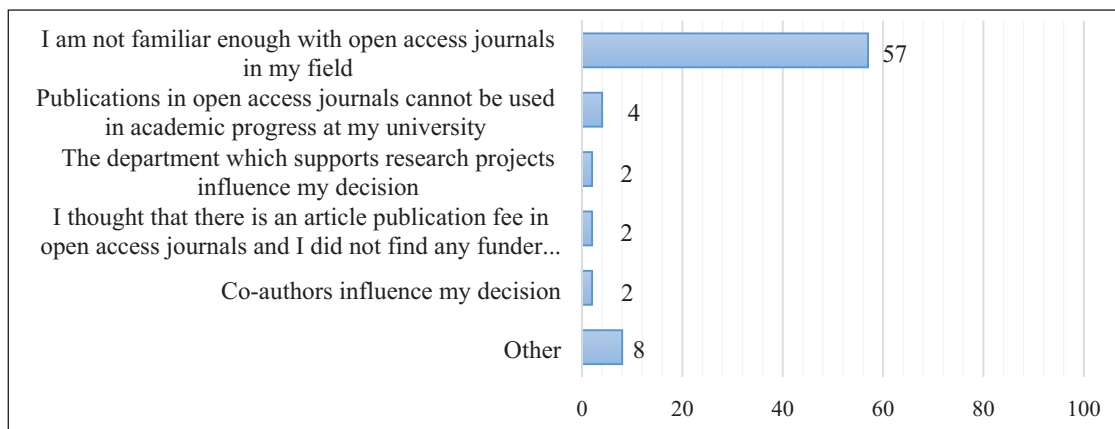


Figure 7. The reasons for not publishing articles in open access journals.

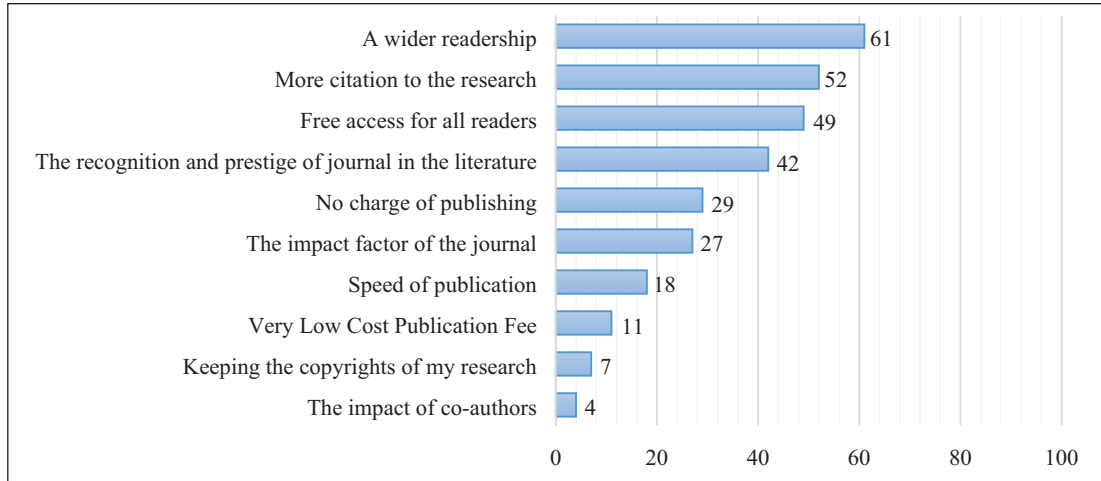


Figure 8. The reasons why academics publish their articles in open access journals.

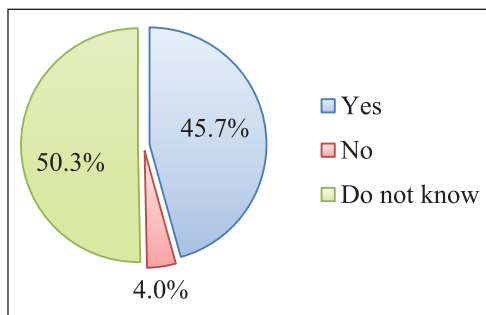


Figure 9. The existence of open access institutional repositories.

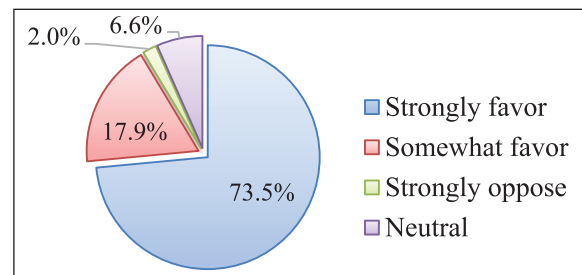


Figure 11. Academics' level of support for open access.

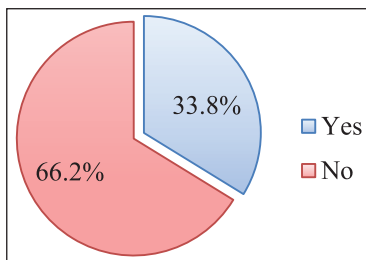


Figure 10. Academics' use of open access institutional repositories.

secure archive (52%), and increasing the impact of their research results (49%).

The level of academics' attitude toward open access (RQ3)

The third research question is to examine the level of academics' attitudes toward open access. In this context, academics' level of support for open access was first examined. The results are presented in Figure 11.

On one hand, the results show that most of the academics support open access (see Figure 11). On the other hand, it is determined that the rate of academics who do not support open access (2.0%) is quite low. In order to examine the level of academics' attitudes toward open access, their opinions on publishing in open access journals have been investigated. The results are presented in Figure 12.

As illustrated in Figure 12, it can be seen that most of the academics (67.5%) state that they could publish in open access journals. Those academics who state that they will not publish in open access journals are determined to be 6%. A number of journals which provide open access publishing charge a fee for the publication of accepted articles. Therefore, academics' attitudes on this issue have been examined. The results are presented in Figure 13.

As illustrated in Figure 13, it can be seen that academics have different opinions about the publication fee in open access journals. While 26.5% of the academics previously published in journals charging a publication fee, 27.8% of them state that they have not published before, but could do so. In addition, it is determined that 35.8% of the academics do not want to publish in a journal that charges a publication fee. The opinions of academics who were seen to have

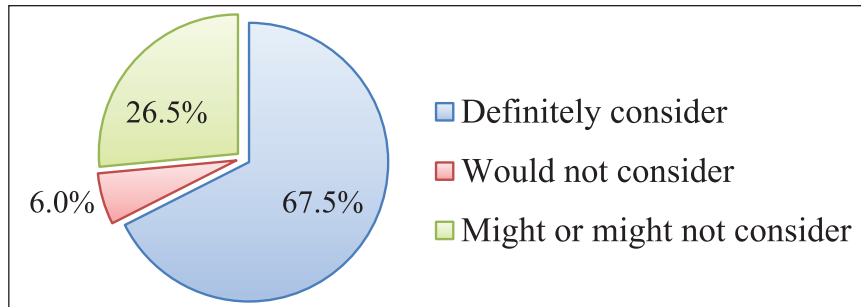


Figure 12. Academics' intention to publish in open access journals.

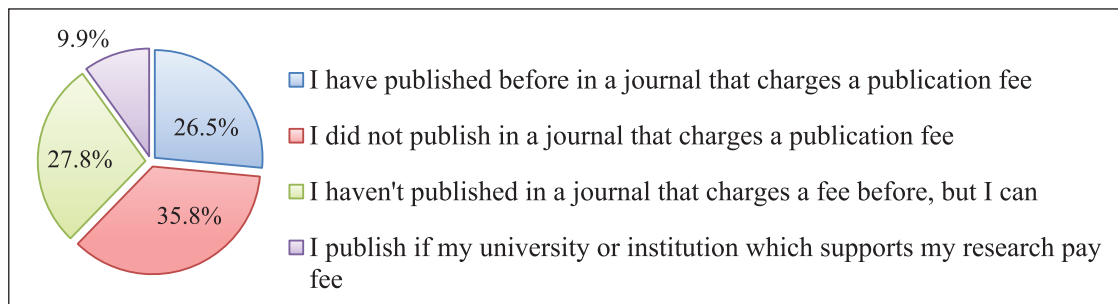


Figure 13. Academics' attitude toward the publication fee in open access journals.

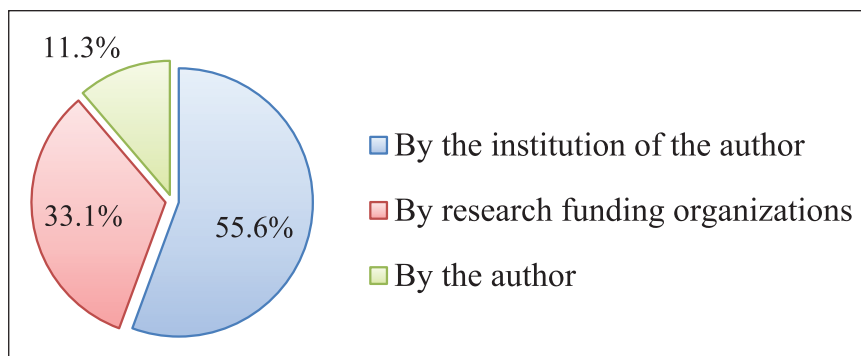


Figure 14. Academics' attitudes toward payment of publication fees.

different opinions about the publication fee were also examined. The results are presented in Figure 14.

More than half of the academics (55.6%) state that the publication fee should be covered by the institution of the author (see Figure 14). Unlike the open access publishing model, access to scholarly publications charges a fee in the traditional scholarly publishing model. The opinions of academics on the traditional scholarly publishing model are presented in Figure 15.

According to the results, more than half of the academics (53%) think that important changes should be made in the traditional scholarly publishing model. The percentage of academics who do not offer any opinions on this issue, and those whose opinion is that there is no need for any change, is around 23%. Moreover, whether or not the

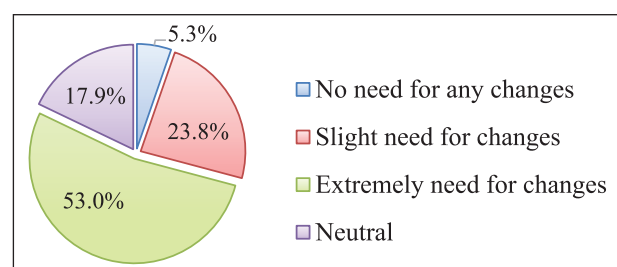


Figure 15. Academics' attitudes toward the traditional scholarly publishing model.

academics want to be informed about open science, open access, and open data was examined. The results are presented in Figure 16.

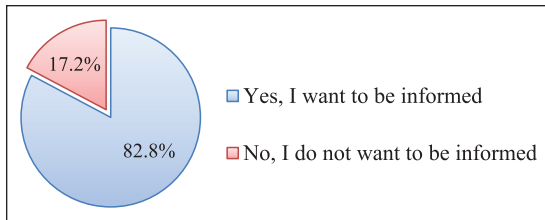


Figure 16. Academics' responses to being informed about open access.

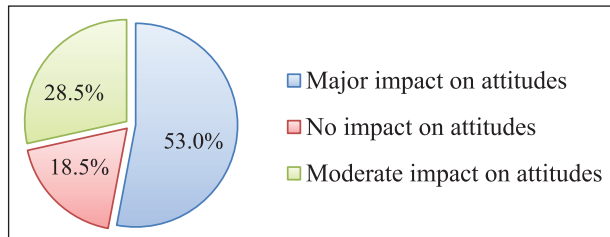


Figure 17. The impact of the pandemic process on academics' attitudes toward open access.

As illustrated in Figure 16, it can be seen that most of the academics (82.8%) want to be informed about open science, open access, and open data. In addition, the impact of the pandemic process on academics' attitude toward open access was examined. The results are presented in Figure 17.

According to the research results, more than half of the academics (53%) indicate that the pandemic process affects their attitudes toward open access (see Figure 17).

Discussion and conclusion

This research aims to reveal academics' awareness, attitudes, and use of open access. For this purpose, academics' awareness of open access first is examined. The research results show that 75% of the participants have open access awareness. Similar research results are also available in the literature. For instance, Manchu and Vasudevan (2018) state that 83.2% of academics have open access awareness, while Alaca, Büyükçolpan, and Kanık (2019) state that only 37.3% of the academics who participated in their study are aware of open access. Many factors related to the research process, such as sample selection and data collection tools, may have an effect on the emergence of different results in studies. However, the fact that approximately one out of every two participants states that they are aware of open access in a study conducted in 2010 (Ertürk and Küçük, 2010) supports the expectation for higher awareness among academics today. Over recent years, it is clear to expect open access awareness to have increased thanks to advanced technology and digital transformation. Indeed, the fact that many universities have their own open access

institutional policies and carry out various activities on this issue can increase the rate of awareness (Serrano-Vicente et al., 2016). The results show that academics mostly have knowledge of open access through the Internet and their friends. It is possible to find similar research results in the literature (Manchu and Vasudevan, 2018; Serrano-Vicente et al., 2016). The obtained results are unsurprising considering that the Internet is nowadays at the center of information flow around the world. However, it is surprising that academics have limited knowledge of many of the important concepts used in open access, although they are highly aware of open access. Narayan et al. (2018) indicate that most academics state that they do not understand how the impact factor of a journal is evaluated or how their own actions can change this impact factor. Indeed, although the publication of scholarly research on platforms, such as Academia.edu and ResearchGate, greatly increase the number of citations (Niyazov et al., 2016), it was determined in a study by Ortega (2015) that a very small proportion of the participants use these platforms. It can be said that there is a similar situation for open access. In order for academics to use open access effectively, they need knowledge and experience beyond a basic level of awareness. According to the results, 50% of the academics state that the COVID-19 pandemic process affects their open access awareness, while 35% of the academics state that this process only partially affects their awareness. Within this context, the information deficiencies of academics on open access and the increase in their awareness during the pandemic process can be filled. For this reason, universities particularly need to organize various activities beyond adopting certain open access policies.

When considering the level of academics' use of open access, it was found that almost all of them use articles in open access journals for their research. However, interestingly, half of the participants never publish in open access journals. The most important reason is that academics are not sufficiently familiar with open access journals in their field of study. It is expected that incentives for open access will affect academics' publishing preferences (Rodriguez, 2014). However, it requires the quality of open access systems to be increased and a cultural change needs to occur (Kim, 2007). The reasons for publishing in open access journals in the first three ranks are a wider readership, achieving more citations to the research, and free access for all readers. It is possible to find similar research results in the literature (Creaser et al., 2010; Odell et al., 2016). The impact factor, prestige, speed of publication, and visibility of journals are generally effective in the selection of journals by academics (McCabe and Snyder, 2014; Odell et al., 2016; Wagner, 2014). It is interesting that while academics want their research to reach more readers and achieve citations, they are unaware of open access institutional

repositories. The results show that half of the academics involved do not know whether there are open access institutional repositories at their institutions. Indeed, a lack of adoption of self-archiving (Narayan et al., 2018) and the effective use of a few open access institutional repositories at universities are a reflection of this situation (Alaca et al., 2019). It is determined that 34% of the academics who are aware of their institutional repositories use them. The most important problem faced by academics, when using open access institutional repositories, is their concern over legal issues related to copyright (Manchu and Vasudevan, 2018; Yang and Li, 2015). It was noted that the majority of academics who do not archive their research in institutional repositories have this concern (Dutta and Paul, 2014). This shows that a number of academics do not know the benefits of sharing their research in open access institutional repositories (Manchu and Vasudevan, 2018; Marsh, 2015).

It was found that the majority of academics support open access and have a positive attitude toward it. Although Rodriguez (2014) states that academics have a negative attitude toward open access, there are also studies where 90% of the academics involved support open access (Dallmeier-Tiessen et al., 2011; Schroter et al., 2005). In addition to this, 67% of the academics in the research state that they could publish in open access journals, 53% of the academics state that important changes should be made in the traditional publishing system, and 82.8% of the academics state that they would like to be more informed about open access. This situation shows that the academics involved have a positive attitude toward open access. Perhaps, the greatest problem with regard to publishing in open access journals is the publication fee (Siler and Frenken, 2020). In the research, 35% of the academics involved state that they would not publish in any journal demanding a publication fee. It can be seen that the most important obstacle to open access publishing is the broadcast fee today (Aguzzi, 2019; Siler and Frenken, 2020; Solomon and Björk, 2012). In addition, 55% of the academics believe that the publication fee problem can be solved with a payment by the institution of the author. This depends on whether the authors' institutions can afford such expenditure or whether they can produce different solutions or not. However, solving the publication fee problem is critical for the development of open access publishing. It has been determined that the effect of the COVID-19 pandemic process on academics' attitudes toward open access is around 53%. This result, as well as academics' positive attitudes toward open access, shows that different methods should be looked into for solutions to these problems.

Limitations and future research

In this research, results relating to open access that will contribute to the literature have been obtained. However,

this research has a number of limitations. It is important to consider these limitations when evaluating the results. First, the research is limited to 151 participants, meaning that the scope of the research is limited. Although academics from different research areas participated in this research, the number of participants in certain research areas is low. Conducting future studies with a wider audience may provide more comprehensive results. In addition, a questionnaire was used for the data collection tool in the research. For future studies, the data obtained using different data collection tools could be diversified. Furthermore, not only could open access be further examined, but also academics' awareness, attitudes, and use in other dimensions of open science, such as open educational resources, open peer-review, open book, open source software, and open data applications, could be looked at. Thanks to these studies, open access may be evaluated on a broader spectrum.

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