

VISITORS OF ON-LINE MUSEUMS: ANALYSIS OF THE PUBLIC OF VIRTUAL EXHIBITIONS IN POLAND

Gabriela Manista

Faculty of Journalism, Information and Book Studies at the University of Warsaw
ORCID 0000-0002-1012-3958

Introduction

Virtual exhibitions are digital spaces designed by an organization and shared with the public on-line for the purpose of disseminating their collection. The intensified resorting to the latest ICT technologies in presenting collections is not only the effect of the present tendency in museology: of the extension of the concept of a museum exhibit and new means of presenting objects,¹ but also of the growing demand of the public to use innovatory tools for content reception. Already in 1947, André Malraux described an imaginary museum: *musée imaginaire*, the concept proclaiming the rejection of a physical institution and replacing it with a place centred on reproductions of art works.² It can be said that the departure point for e-museums was the understanding of museums as non-material collections freed from the rigidly defined space-time continuum.³ The closest so far attempt at defining a virtual museum referring to the vision and mission of museums from the traditional definition according to ICOM was presented in 2014, and read as follows: *A virtual museum is a communication product accessible by a public, focused on tangible or intangible heritage. It uses various forms of interactivity and immersion for the purpose of education, research, enjoyment, enhancement of visitor experience. The contents presented by virtual museums are usually, but not exclusively, provided through electronic means. A virtual museum can also be defined as; an online museum, hypermuseum, digital museum, cyber museum, or a web museum.*⁴

Digitized exhibits allow to share museum objects with the public under the conditions unthinkable of before. The

digital shift allows access to the content conveyed by museums while solving such challenges as the number of visitors (virtual space allows a simultaneous multitude of subjects), their location (regardless of where the visitor is⁵), exhibition opening hours (the possibility to visit a virtual museum at any time 24 hours a day), and overcoming any other barriers (e.g., disabilities). Importantly, the majority of such institutions do not make the whole physical space of their collection accessible to visitors,⁶ this adding an advantage to digital museums which allow the public to see the works and artefacts collected in storage spaces. However, visiting a cybermuseum is not identical with the experience a visitor can get when visiting the physical space of the given institution, and it cannot equal cognition of the object in its analogue form, in a real-life experience.⁷

Digitizing of museums' display offer

The means applied by museums in order to share their collections in virtual space differ. This resulting not merely from the popularity of a given institution or the collection it owns, but from its financial capacity and participation in international and national digitization projects.⁸ At the beginning of the development of ICT in museums and other institutions of cultural heritage the priority of presenting their collection was given to the organizations operating on the national level, which boasted unique heritage pieces and artefacts, however, the technological consumption gaining dynamic by the public and access to the tools creating digital content in museums have been slowly levelling the disproportions

between both the centrally- and locally-operating organizations. When designing virtual exhibitions, museums in Poland apply various technological tools of varied advancement. A distinguished group of virtual exhibitions presenting a real (past or ongoing exhibition) in the digitized 1:1 format can be found as well as digital units complementing the physical display, namely showing elements which have never been presented to a broader public. It seems that disseminating heritage among the public is the main goal of e-museums. Let us not forget, however, about the commitment resulting from the mission of physical museums, which virtual museums should also fulfil, namely providing open access to collections, their organization in a way facilitating searching for content, and preservation of museum exhibits.⁹ The situation of every museum is obviously individualized, however, it depends on financial¹⁰ and legal issues. Despite lower costs and greater availability of recording equipment the hindrance is still found in training the staff in relation to designing interesting and factually correct online exhibitions, in the standards related to sharing collections online, or the problems with technology's 'aging', particularly visible in the opinion of the younger public.

Virtual exhibitions are a flexible tool, therefore designing a visiting route may assume visitor's individual and interactive experience. Historical museums in Poland have been benefitting from what IT can offer in order to lead their online public through a created virtual narrative with additional elements which do not exist even in the museum's permanent display.¹¹ The intention of such procedures is not only to make the potential public acquainted with the collection, but also to encourage them to visit the museum in the future. However, the precondition for mobilising the public to visit the museum is designing an interesting solution, which often implies financial and time outlays. And just as there is a general consensus that museum admission in real world can cost a fee, the public are not willing to pay for the online offer (44% of the surveyed),¹² this automatically inspiring new concerns in relation to budget allocating to virtual exhibitions

E-museums versus the pandemic

During the COVID-19 pandemic, there was a heated debate on the purpose and meaning of online museums among the museological circles and within public space.¹³ Many public members decided to visit cultural institutions and heritage pieces via a screen, without the necessity to leave home. According to the report of the Network of European Museum Organisations, from the beginning of the pandemic what enjoyed the highest popularity with the recipients of digital products from among the proposed range were operations in social media: almost 60% of the surveyed museums observed an increased interest in their official profiles on portals, followed by videos (42%), and precisely virtual visits (28%).¹⁴ The increase in visits paid to cyber museums encouraged museums to add this communication product to their offer or to modernize the earlier created virtual exhibitions. According to the statistics of the National Institute for Museums and Public Collections, NIMOZ, in 2020. Almost half of the surveyed museums (49.8%) mounted digital exhibitions, which compared to the previous year

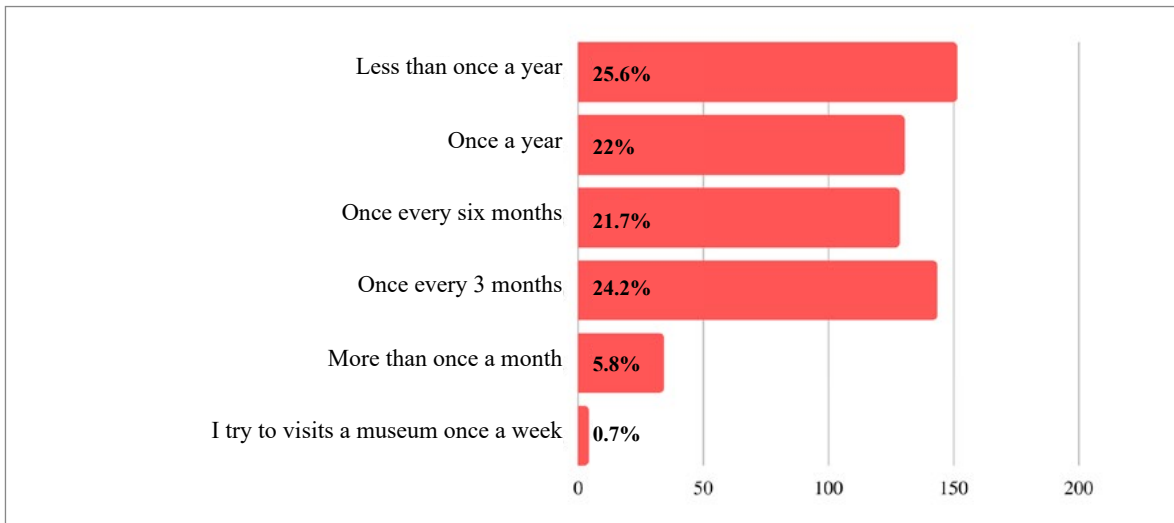
(about 20% of museums had applied that solution¹⁵) is a relatively dynamic growth. The report data also confirmed intensification of the production of this solution. The average number of digital displays shared by museums in 2020 stood at four, while the average number of visits to a single exhibition stood at 22.613.¹⁶ The numbers reflect the need the public had to maintain contact with culture limited by the pandemic. However, they do not point directly to the growing interest in digital offer, but more to the lack of the possibility to visit a traditional museum. According to the report of the National Centre for Culture related to the *readiness to undertake cultural activity*,¹⁷ elaborated on the grounds of the surveys conducted twice, museums came sixth (in June 2020) and fourth (in December 2020) among cultural institutions that the public were willing to visit in the first place. Although the public generally use digital solutions offered by museums, *some opinions can be heard that even the best online offer cannot replace a real visit to a museum*.¹⁸

The scheme and results of the research process

The departure point for the research was the need to analyse the public of Polish online exhibitions resulting from the growth of museum activity in this domain and the multitude of products shared with users. The research was based on the Computer-assisted Web Interview model, CAWI, conducted through the website in winter 2022.¹⁹ It was carried out using snowball sampling, with the form closed upon receiving 590 correctly filled questionnaires which provided a representative research sample for analysis. The project should be regarded as a beginning of a more profiled research into the public of virtual museums and as a source of inspiration for creating similar analyses in respective museums in the future.²⁰

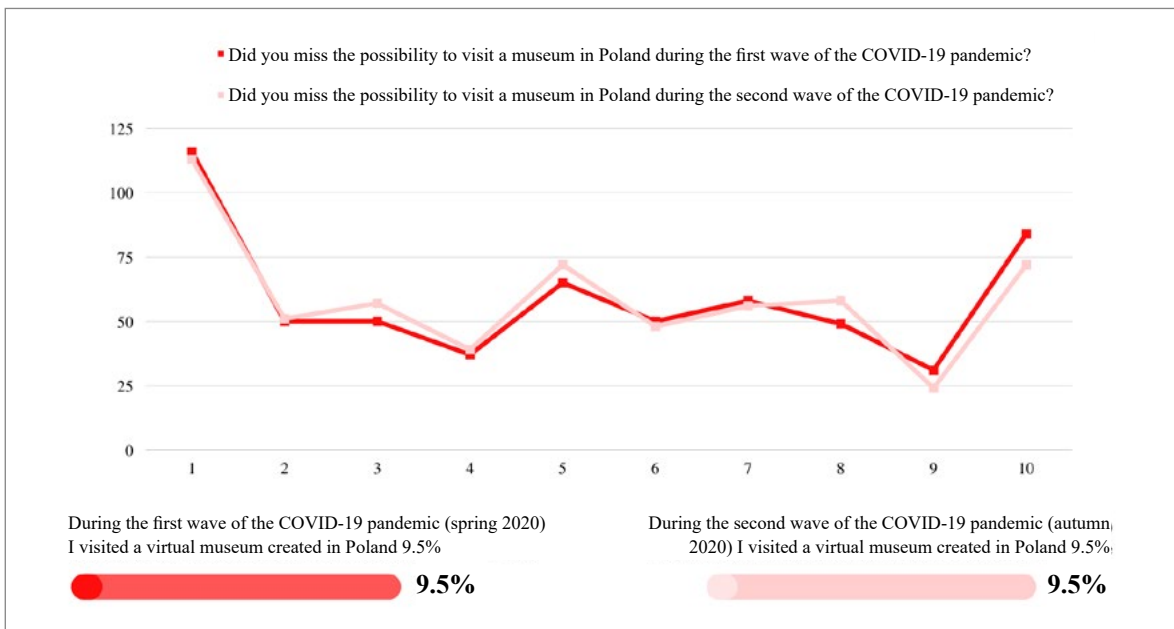
The research was participated by 370 females (62.7%), 214 males (36.3%) and 6 individuals (1%) not identifying themselves with any of the given gender options. The respondent group acquired for research is composed of individuals aged 18–70. As for their domicile, 54.4% of the surveyed come from larger urban centres, as many as 15.1% are currently living in rural areas, three almost equally numerous groups (10.8%, 10%, and 9.7% respectively) inhabit different size towns (in the following order: city over 150.000 inhabitants up to 500.000 inhabitants, town up to 50.000 inhabitants, town over 50.000 up to 150.000 inhabitants). In order to avoid errors in surveying the respondents they were asked about the frequency of their visits to museums in Poland, not counting professional visits.

The aspect analysed in the course of the research was the dependence between a visit to a cyber museum and the first two waves of the pandemic.²¹ First, the surveyed individuals were asked to identify on a 10-degree scale²² how much they missed the possibility to visit a traditional museum in Poland, following which they were to answer whether they had taken advantage of an online display. Despite the fact that the average figure in responses to the question related to the need to visit a traditional museum stood at 5.2 (the first wave) and at 5 (the second wave), the respondents did not eagerly seek virtual displays: only 9.5% (spring 2020) and 8.1% (autumn 2020) did.



Author's own study

Chart 1. Frequency distribution of visits to museums in Poland



Author's own study

Chart 2. Respondents' replies concerning the need to visit a traditional museum during the COVID-19 pandemic waves and the number of respondents visiting virtual museums during the COVID-19 pandemic waves

Attempt at the analysis of the public visiting virtual exhibitions

It results from the data that 8.8% (50 out of 590) of the surveyed individuals actively visit virtual exhibitions. Based on this group it was decided that a prototype serving to preliminarily define the e-museum public would be composed; in the future it should be extended with all the additional data acquired through In-depth Interviews, IDIs. The closed-ended questions in the form served to analyse the public in view of four categories of variables:

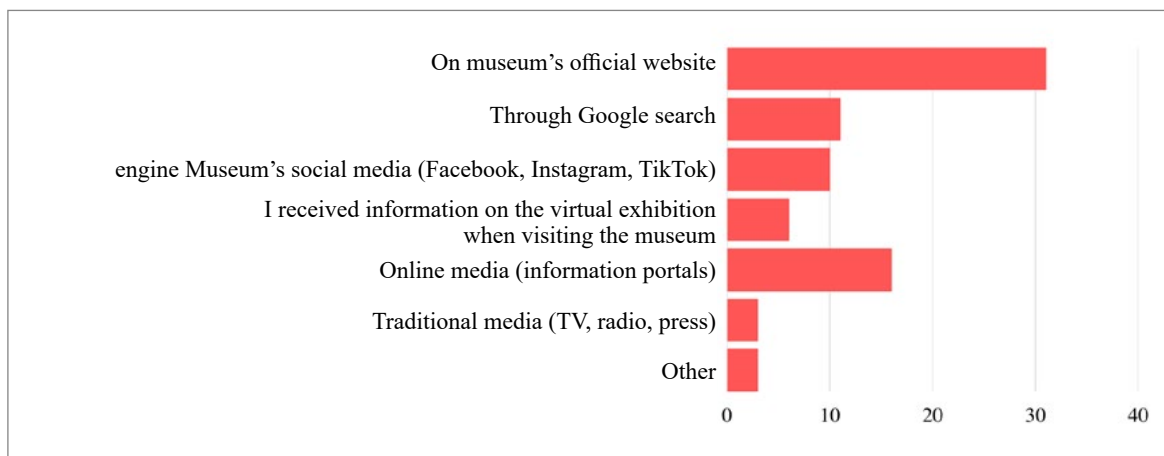
- Distribution of answers (*I visit virtual museums*) by gender;
- Distribution of answers (*I visit virtual museums*) by age groups;
- Distribution of answers (*I visit virtual museums*) by domicile;
- Distribution of answers (*I visit virtual museums*) by frequency of visits to a traditional museum.

Thanks to this method it is known what groups among the respondents use cyber museums most frequently. In this case we can see that it is mainly women who are the

A. Gender	Women	Men	Other			
	67.3%	32.7%	0%			
B. Age	18–20 years	21–30 years	Other	41–50 years	51–60 years	61–70 years
	17.3%	46.2%	11.5%	17.3%	5.8%	1.9%
C. Domicile	Rural area	Town up to 50.000 inhabitants	Town from 50.000 to 150.000 inhabitants	Town from 150.000 to 500.000 inhabitants	City over 500.000 inhabitants	
	19.2%	11.5%	13.5%	9.6%	46.2%	
D. Frequency of museum visits	Less than once a year	Once a year	Once every 6 months	Once every 3 months	More than once a month	At least once a week
	7.7%	13.5%	25%	13.8%	21.1%	1.9%

Author's own study

Chart 3. Surveyed users of virtual exhibitions classified into four categories



Author's own study

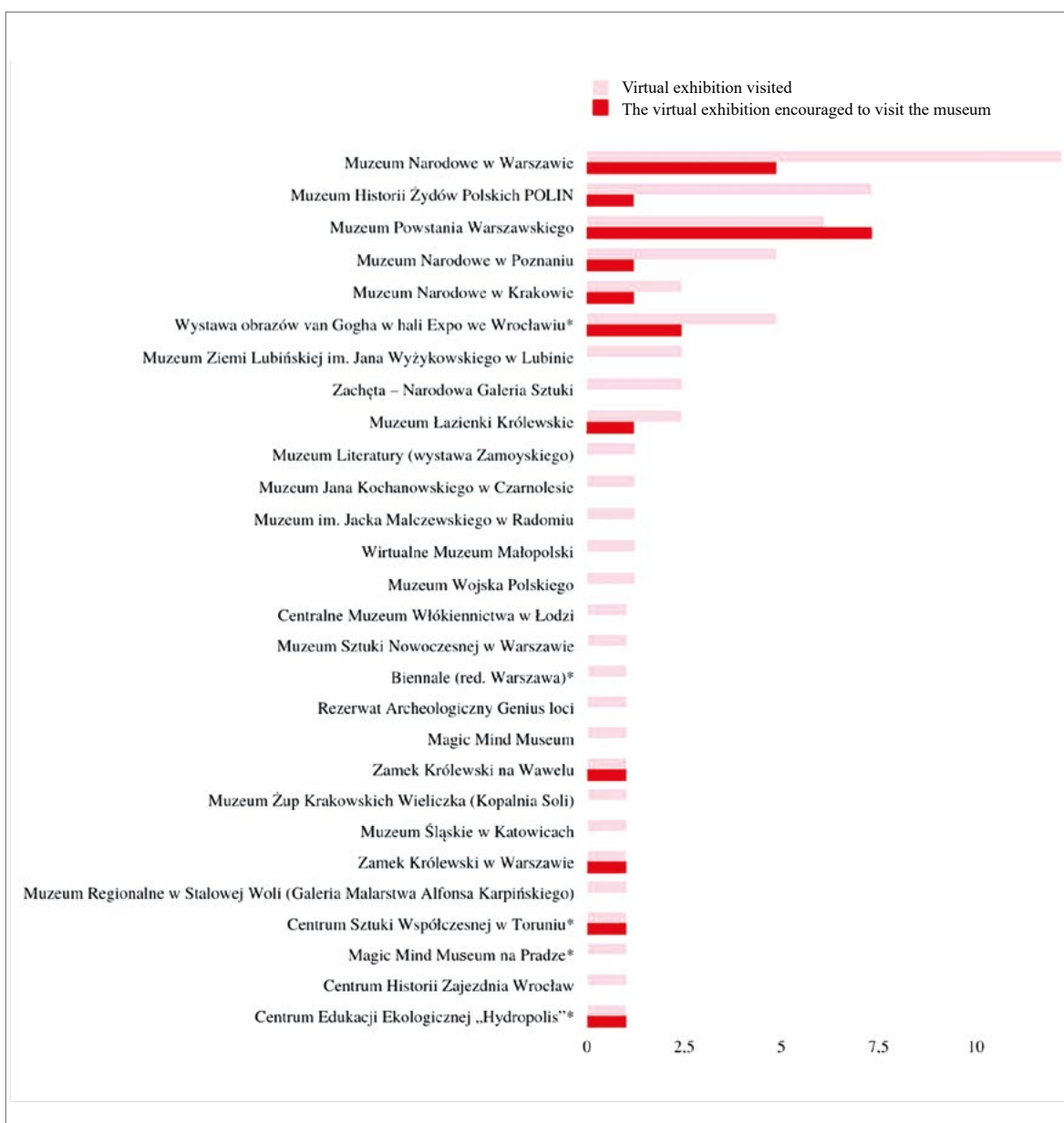
Chart 4. Sources of information on virtual exhibitions

recipients of the content shared in virtual exhibition. In the age distribution, we can see that definitely the greatest number of people are aged 21–30 (almost half of the respondents, 46.2%). The result may have depended on their academic activity, since statistically this is the age group of people who go to university in Poland.²³

The analysis of the data related to domicile demonstrates the highest interest in online exhibitions among metropolis residents (46.2%), the second place in this category (almost 1/5 of the respondents) is taken by individuals inhabiting rural areas. Such a high result for the latter may be accounted for with the access to physical cultural institutions: individuals living in the countryside most likely resort to online exhibitions owing to territorial limitations resulting from the location of

traditional museums in urban centres. Interestingly, those respondents who show the highest frequency of visits to traditional museums (they visit a museum at least once a week) rarely resort to virtual exhibitions. Merely 1.9% of the respondents declare that they use online exhibitions, which may be accounted for with the observation that they do not feel the need to additionally view the collection online.

An important aspect was to identify where active recipients find information on the virtual exhibition they would visit. This question was formulated in two ways: one had responses provided in six options and the other was an open-ended form for giving other answers. The biggest number of the respondents declared that their source of information on a virtual exhibition was the museum's website (45.6%),



Author's own study

Chart 5. Virtual exhibitions or museums visited by the respondents (pink line) and virtual exhibitions or museums which encouraged the respondents to visit a traditional museum (red line)

* virtual exhibitions or virtual museums that are not listed in the official list of museums in Poland

with the lowest result (4.4%) pointing to the traditional media, i.e., the press and television. The open-ended answers gave three other sources motivating the visit to a virtual museum: 'lecturer', 'school', 'friends'. This may prompt the interpretation that online displays are used particularly for educational purposes in the course of school or university education.

The respondents who gave a positive answer to whether they visited virtual exhibitions were asked to name the exhibitions or point to the institutions that mounted them. Owing to the characteristic of this question it

was formulated as open-ended. The analysis pointed to 28 names either of exhibitions or museums presented below. Despite the cases in which a given museum is not featured in the official museum register in Poland, the online exhibitions were included in the list as an example of a virtual product disseminating culture and heritage based on free access. In the additional open-ended question the respondents were asked whether any virtual exhibition mounted by a museum in Poland encouraged the respondent to visit that museum in real life, to which 8.5% of the surveyed gave the positive answer, giving the name of the display.

Summary of the research and recommendations

Virtual exhibitions are a tool supporting collection dissemination and preservation, as well as processes of democratization of culture and heritage.²⁴ Appropriately designed, not only can they constitute an element of the museum, but also its extension. However, many different studies demonstrate that online museums cannot replace a traditional museum visit, yet they can become a museum experience apart. They are useful in educational processes, complementing traditional teaching methods, and as an illustration of examples discussed during a class or a lecture. Importantly, online museums can play a supplementary role in the event of the impossibility of a visit to the museum because of its inaccessibility, individual barriers (domicile, disability), or restrictions resulting from the occurrence of force majeure, e.g., the pandemic.

Virtual exhibitions can also motivate a visit to the traditional museum as long as they are a meticulously prepared and interesting digital product which incites the recipient's interest. That is why it is of utmost importance for museums to design them in a thoroughly thought out way coinciding with the expectations of the potential public. Following

the principle: *first study, then act*,²⁵ already at the conceptual stage of an online exhibition its usability tests should be conducted,²⁶ and the initial identification of the target group of a given virtual display should be carried out. In order to avoid trivialization of the message and leading to the situation in which the virtual display fulfils merely an entertainment function,²⁷ it is recommended for experts to contribute to creating the solution instead of outsourcing the whole process to IT companies.

Despite the fact that thanks to the conducted research the general recipient of an unidentified virtual museum was analysed, the investigation results can be treated as a departure point for further debate on the online museum public and their needs. The presented methods should be treated as a source on the potential of studying them in the virtual space. The results show online exhibitions mounted by museums in Poland which encouraged the public to visit the traditional museum; these can be regarded as design models for digital solutions reaching new public. A relevant research conclusion is also the identification of the source from which the public most often derive information on the virtual offer (in the case of digital exhibitions it is mainly the museum's official website²⁸), the conclusion which may support museum's communication strategy planning.

Abstract: Virtual exhibitions have become a tool increasingly more frequently applied by Polish museums in order to reach a wider public. Using cyberdisplays as a digital product, not only do the institutions disseminate knowledge of their collection, but also reach new public. The potential and challenges entailed in designing e-museums have been a topic vivid

in museology since the late 1990s. During the COVID-19 pandemic the discussion on tasks and purposes of digital displays was resumed. The paper presents the results of the CAWI research among visitors of digital museums; it also points to their motivation, while analysing the demand for such tools classifying individuals who use them into various categories.

Keywords: virtual exhibitions, virtual museum, museum digitizing, 3D museum, hypermuseum, cybermuseum.

Endnotes

- 1 W. Idziak, *Współczesne tendencje w muzealnictwie*, http://muzeoblog.mik.krakow.pl/files/W_Idziak_Wspolczesne_tendencje.pdf [Accessed: 22 August 2022].
- 2 More on the virtual concept of the *musée imaginaire* see L. Dziedzic, '„Muzeum wyobraźni” André Malraux: idea i praxis', *Studia Muzealno-Historyczne*, 5 (2013), pp. 219-233.
- 3 *Ibidem*, p. 224.
- 4 D. Ferdani, A. Pagano, M. Farouk, *Terminology, Definitions and Types for Virtual Museums*, Rome 2014, pp. 9-10.
- 5 T. Jędrzyński, 'Turystyka muzealna', in: *Współczesne formy turystyki kulturowej*, ed. by K. Buczkowska, A.M. von Rohrscheidt, Poznań 2009, pp. 55-57.
- 6 It is assumed that even up to 95% of the collections of the largest museums are on everyday basis in storages. T. Quinn, *Making the Absent Object Present: Towards a holographic museum of modern art (hMoMA)*, Conference: EVA London 2019 Electronic Visualisation and the Arts, p. 150, https://www.scienceopen.com/document_file/3c08811d-28fc-48e0-b48c-a19586c9ffa1/ScienceOpen/148_Quinn.pdf [Accessed: 28 August 2022].
- 7 G. Żuk, *Edukacja muzealna i nowe media*, w: *Animacja działań kulturalnych – wyzwanie współczesności*, ed. by M. Latoch-Zielińska, Warszawa 2010, pp. 101-103.
- 8 A. Pawłowska, Ł. Matoga, 'Wirtualne Muzea w Internecie – forma promocji i udostępniania dziedzictwa kulturowego czy nowy walor turystyczny?', *Turystyka Kulturowa*, 9 (2014), pp. 46-47.
- 9 *Report: State of the Art on Virtual Museums in Europe and Outside Europe – Theory Design [UPDATED 2014]*, pp. 35-37, http://www.v-must.net/sites/default/files/D3.1_update.pdf [Accessed: 19 August 2022].
- 10 *Despite the willingness and approval from the circle of museologists to undertake activities related to a widely understood digitizing, these institutions bump against a down-to-earth challenge which is insufficient financing of digitizing cultural assets*. M. Baka, *Potencjał wykorzystywania muzealnych zasobów cyfrowych w badaniu dziedzictwa kulturowego – kilka refleksji*, 2020, p. 165, https://repozytorium.umk.pl/bitstream/handle/item/6675/Malgorzata_Baka_Potencjal_wykorzystania%20%281%29.pdf?sequence=1 [Accessed: 29 August 2022].
- 11 The Polish History Museum is an example of a virtual museum whose official building is only being raised, therefore it does not have as yet a permanent exhibition open to the public. The Museum thus uses ICT in order to reach the potential public. See <https://muzhp.pl/pl/p/247/muzeum-online> [Accessed: 28 August 2022].

- ¹² A. Kawa, J. Jęczalik, O. Skakowska, *Kultura w czasie zarazy*, Rzeszów 2020, p. 22.
- ¹³ During the pandemic the answer to the question whether a virtual museum should be regarded as a museum was no longer that obvious. M. Petelska, 'Polskie muzea w czasie pandemii COVID-19: działalność on-line i (nie)stosowanie Rapid Response Collecting', *Studia Historica Gedanensia*. 12 (2021), pp. 413-414.
- ¹⁴ *NEMO Follow-up survey on the impact of the COVID-19 pandemic on museums in Europe Final Report*, NEMO, 2021, s. 5, https://www.ne-mo.org/fileadmin/Dateien/public/NEMO_documents/NEMO_COVID19_FollowUpReport_11.1.2021.pdf [Accessed: 31 August 2022].
- ¹⁵ A. Hejwowska, K. Figiel, A. Pietraszko, *Muzea w 2020 roku*, Warszawa 2022, pp. 23, 26.
- ¹⁶ *Ibidem*, p. 26.
- ¹⁷ See *Gotowość do podjęcia aktywności kulturalnej po zniesieniu ograniczeń epidemicznych*, <https://www.nck.pl/badania/aktualnosci/549813554> [Accessed: 10 September 2022].
- ¹⁸ *Zmiany – dlaczego nie? Muzeum Narodowe w Krakowie po pandemii. Raport z badania opinii publicznej*, p. 22, <https://media.mnk.pl/images/upload/aktualnosci/2020/Ankieta/MNK%20po%20pandemii%20-%20pe%20ny%20raport.pdf> [Accessed: 12 September 2022].
- ¹⁹ The form was made available to respondents in January and was open until the end of February 2022.
- ²⁰ The report from the research among the staff of the cultural sector points to the problems resulting from not knowing their own public in museums, the knowledge being essential for building the online offer (e.g., We have a problem, since we have not studied the public, and we do not really know our recipients). A. Buchner, N. Cetera, A. Janus, A. Urbańska, M. Wierzbicka, *Kultura w pandemii. Doświadczenie polskich instytucji kultury*, Warszawa 2021, pp. 37-38.
- ²¹ In the research project it was decided that the questions would concern the first wave (spring 2020) and the second wave (autumn 2020) of the COVID-19 pandemic.
- ²² The scale: 1: not at all, 10: very much.
- ²³ The statistics based on the methodology worked out by the Statistics Poland (GUS) in cooperation with the National Information Processing Institute, National Research Institute, in 2019, 2020, and 2021, show that ca % of students were individuals aged 19-29. See *Raport – Studenci*, https://radon.nauka.gov.pl/raporty/Studenci_2021 [Accessed: 31 August 2022].
- ²⁴ One of the tasks of the new media used by museums is precisely museums' opening to a wide range of recipients. I. Franckiewicz-Olczak, 'Nowe media w muzeum. Demokryzacja kultury a unifikacja muzeów i aktywizacja odbiorców', *Studia Sociologica*, 9 (2017), pp. 108-109.
- ²⁵ A. de Rosset, K. Zielonka, 'Aplikacje mobilne w muzeach, moda czy potrzeba?', *Muzealnictwo*, 57 (2016), p. 240.
- ²⁶ An important reflection on designing digital products in museums was shared by Ewa Drygalska who emphasized that despite the possibility to test ICT solutions in the course of creating them, the stage of usability tests is not applied. E. Drygalska, 'Jak stworzyć cyfrowe doświadczenia zwiedzających? Badania i testowanie jako podstawa projektowania cyfrowych produktów w muzeum', *Muzealnictwo*, 62 (2021), pp. 194-200.
- ²⁷ A. Bentkowska-Kafel, 'Muzeum wirtualne – muzeum bez granic?', *Muzealnictwo*, 54 (2013), p. 164.
- ²⁸ This result does not surprise. Already in 2019, a report was published informing e.g., that the public of display institutions most preferably (43.9%) learn about their offer from their official website. M. Bańdo, Ł. Gawęł, P. Król, I. Parzyńska, F. Skowron, A. Szostak, *Raport z projektu badawczego. Krakowski odbiorca kultury*, Kraków 2019, p. 34.

Bibliography

- Baka Małgorzata, Potencjał wykorzystywania muzealnych zasobów cyfrowych w badaniu dziedzictwa kulturowego – kilka refleksji, https://repozytorium.umk.pl/bitstream/handle/item/6675/Malgorzata_Baka_Potencjal_wykorzystania%20%281%29.pdf?sequence=1 [Accessed: 29 August 2022].
- Bańdo Marcin, Gawęł Łukasz, Król Patrycja, Parzyńska Iwona, Skowron Filip, Szostak Agnieszka, *Raport z projektu badawczego. Krakowski odbiorca kultury*, (Kraków: Wydawnictwo Attyka, 2019).
- Buchner Anna, Cetera Natalia, Janus Aleksandra, Urbańska Agnieszka, Wierzbicka Maria, *Kultura w pandemii. Doświadczenie polskich instytucji kultury*, (Warszawa: Centrum Cyfrowe, 2021).
- Drygalska Ewa, 'Jak stworzyć cyfrowe doświadczenia zwiedzających? Badania i testowanie jako podstawa projektowania cyfrowych produktów w muzeum', *Muzealnictwo*, 62 (2021), pp. 100-110.
- Dziedzic Leszek, '„Muzeum wyobraźni” André Malraux: idea i praxis', *Studia Muzealno-Historyczne*, 5 (2013), pp. 219-233.
- Ferdani Daniele, Pagano Alfonsina, Farouk Mohamed, *Terminology, Definitions and Types for Virtual Museums*, (Rome: V-MusT.net, 2014).
- Franckiewicz-Olczak Izabela, 'Nowe media w muzeum. Demokryzacja kultury a unifikacja muzeów i aktywizacja odbiorców', *Studia Sociologica*, 9 (2017), pp. 106-114.
- Gotowość do podjęcia aktywności kulturalnej po zniesieniu ograniczeń epidemicznych*, <https://www.nck.pl/badania/aktualnosci/549813554> [Accessed: 10 September 2022].
- Hejwowska Antonina, Figiel Katarzyna, Pietraszko Anna, *Muzea w 2020 roku*, (Warszawa: Narodowy Instytut Muzealnictwa i Ochrony Zbiorów, 2022).
- Idziak Waclaw, *Współczesne tendencje w muzealnictwie*, http://muzeoblog.mik.krakow.pl/files/W_Idziak_Wspolczesne_tendencje.pdf [Accessed: 22 August 2022].
- Jędrysiak Tadeusz, 'Turystyka muzealna', in: *Współczesne formy turystyki kulturowej*, ed. by Karolina Buczkowska, Armin Mikos von Rohrscheidt, (Poznań: Akademia Wychowania Fizycznego w Poznaniu – Organizacja Turystyczna „Szlak Piastowski”, 2009), pp. 36-58.
- Kawa Artur, Jęczalik Joanna, Skakowska Oktawia, *Kultura w czasie zarazy*, Estrada Rzeszowska Rzeszowski Inkubator Kultury, Rzeszów 2020.
- NEMO Follow-up survey on the impact of the COVID-19 pandemic on museums in Europe Final Report*, NEMO, 2021, https://www.ne-mo.org/fileadmin/Dateien/public/NEMO_documents/NEMO_COVID19_FollowUpReport_11.1.2021.pdf [Accessed: 31 August 2022].
- Pawłowska Aneta, Matoga Łukasz, 'Wirtualne Muzea w Internecie – forma promocji i udostępniania dziedzictwa kulturowego czy nowy walor turystyczny?', *Turystyka Kulturowa*, 9 (2014), pp. 46-58.
- Petelska Michalina, 'Polskie muzea w czasie pandemii COVID-19: działalność on-line i (nie)stosowanie Rapid Response Collecting', *Studia Historica Gedanensia*, 12 (2021), pp. 406-415.

Quinn Terence, Making the Absent Object Present: Towards a holographic museum of modern art (hMoMA), Conference: EVA London 2019 Electronic Visualisation and the Arts, https://www.scienceopen.com/document_file/3c08811d-28fc-48e0-b48c-a19586c9ffa1/ScienceOpen/148_Quinn.pdf [Accessed: 12 August 2022].

Raport – Studenci, https://radon.nauka.gov.pl/raporty/Studenci_2021 [Accessed: 31 August 2022].

Rosset Alicja de, Zielonka Katarzyna, 'Aplikacje mobilne w muzeach, moda czy potrzeba?', *Muzealnictwo*, 57 (2016), pp. 236-244.

Zmiany – dlaczego nie? Muzeum Narodowe w Krakowie po pandemii. Raport z badania opinii publicznej, <https://media.mnk.pl/images/upload/aktualnosci/2020/Ankieta/MNK%20po%20pandemii%20-%20pe%C5%82ny%20raport.pdf> [Accessed: 12 September 2022].

Żuk Grzegorz, 'Edukacja muzealna i nowe media', in: *Animacja działań kulturalnych – wyzwanie współczesności*, ed. by Małgorzata Latoch-Zielińska, (Warszawa: Fundacja Muzyka jest dla wszystkich", 2010), pp. 97-106.

Gabriela Manista

A PhD student at the University of Warsaw. Graduate in law and administration and from the Faculty of Journalism and Political Science of the University of Warsaw. Her MA thesis was awarded in the 3rd edition of the $\pm\infty$ Zachęta Grant Competition. In 2019–2022, member of the Board of the Poland Debates Foundation. She focuses on communication changes occurring in cultural institutions. Involved in international research projects, she always seeks opportunities for cooperation between Polish and international institutions; g.manista@uw.edu.pl.

Word count: 3826; **Tables:** –; **Figures:** 5; **References:** 28

Received: 09.2022; **Reviewed:** 10.2022; **Accepted:** 10.2022; **Published:** 10.2022

DOI: 10.5604/01.3001.0016.0748

Copyright©: Some rights reserved: National Institute for Museums and Public Collections. Published by Index Copernicus Sp. z o.o.



This material is available under the Creative Commons – Attribution-NonCommercial 4.0 International (CC BY-NC 4.0). The full terms of this license are available on: <https://creativecommons.org/licenses/by-nc/4.0/legalcode>

Competing interests: Authors have declared that no competing interest exists.

Cite this article as: Manista G.: VISITORS OF ON-LINE MUSEUMS: ANALYSIS OF THE PUBLIC OF VIRTUAL EXHIBITIONS IN POLAND. *Muz.*, 2022(63): 202-209

Table of contents 2022: <https://muzealnictworocznik.com/issue/14332>