

COVID-19 AND DATA: CRISIS MITIGATION TOOLS

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Abstract

The cultural and creative sector (CCS) is one of the hardest-hit sectors due to COVID-19. The rapid decline in audience and revenues makes it impossible to create and offer financially demanding cultural products and services. This will be a long-term effect – it will affect the supply and demand of cultural services for at least two to three years to come. A realistic forecast suggests that this period will be characterized by a narrowed audience market, a decline in the purchasing power of the population and reduced leverage of funding. Decisions about performances, productions and investments in new content can no longer rely on traditional audience behavioural patterns, historical demand data, or an organization's institutional memory. Cultural institutions need to make decisions about the future without being able to predict it even two weeks ahead. The article examines the open data arrays available in Latvia on and the potential of their use in the cultural and creative sector to alleviate the crisis.

Keywords: *cultural and creative sector (CCS), open data, audience, COVID-19.*

Decline of cultural consumption

Arguably the crisis in cultural consumption in Latvia has developed much earlier than in the spring of 2020 when the culture and event industry was closed, following the aggravation of the situation as a result of COVID-19. This is evidenced by the results of several successive studies on cultural consumption as well as the overall results of cultural statistics in various cultural sectors, the conclusions of which are not too flattering for the cultural sector. As early as in 2018, it was concluded that the frequency and regularity of attending cultural events decreased in the long run. The most frequently mentioned reasons by the producers of cultural events were: laziness to attend events (60%), too many different leisure opportunities, too wide choice (56%), lack of interest in culture (55%), lack of finances, high cost of entrance tickets

(51%), lack of time, little free time, busy schedule (51%), distance/getting there, transport problems (49%) [Latvian Academy of Culture, SKDS, Culturelab 2018].

A very simplified visit equation can be expressed by the formula:

$$\text{visit} = \text{interest} + \text{time} + \text{place} + \text{price}.$$

The first three reasons (laziness, too much content, too much choice, not interested) actually play out somewhere in Bourdieu's fields of socially determined taste and capital theory, and more likely show organizers' own lack of interest and/or ability to understand audience change and choice determinants. The following ones (ticket prices, time, distance) have often been underestimated by cultural sociology research [Brook 2017; Delrieu, Gibson 2017; Swanson and Davis 2012]. However, these are the factors that can be answered by data on citizens and society, the economy and business, transport, regions and municipalities.

It is not common to examine this unfavourable trend while maintaining the narrative of Latvia being a cultural power, but it must be admitted that looking at even older data (for example, comparing 2018 data with 2014 data) this is not a new trend but has continued for a long time.

The cancellation of cultural events added to the already declining consumption trend when the Cabinet of Ministers declared an emergency situation on 13 March 2020. The constantly changing restrictions on the course of cultural events (throughout 2020, they have been changed at least ten times in Latvia) inevitably resulted in both a reduced number of events and number of tickets sold (Figure 1).

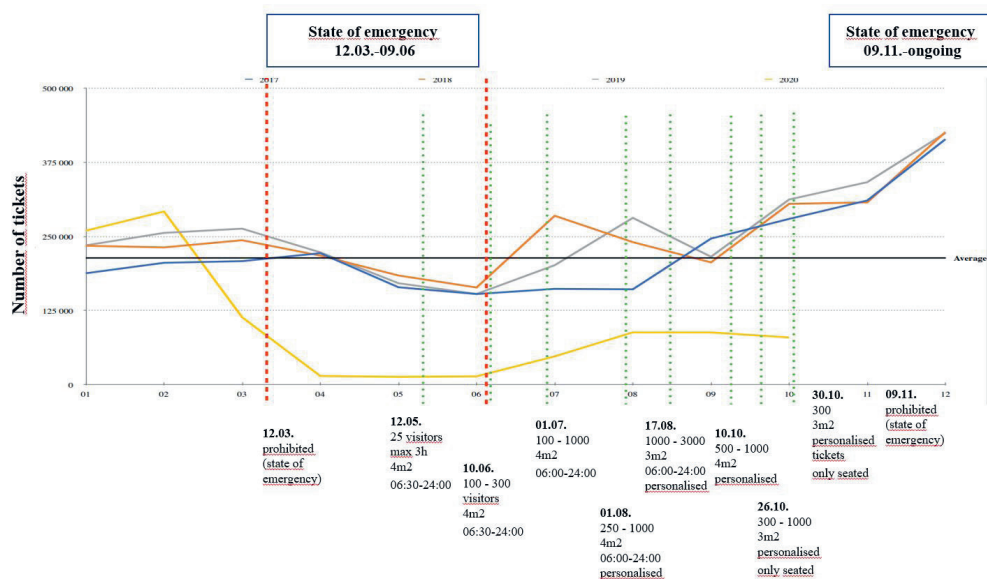


Figure 1. Number of sold tickets.

Data prepared on 30.10.2020, based on the information provided by the ticket-selling platforms Biļešu paradīze, Biļešu serviss, Bez rindas and e-kase.

However unpleasant the data for 2020 may seem (the decline in the cultural and creative industries in Latvia is also reflected in other data, such as changes in the added value of the sectors, the decline in taxes paid by the industry etc.), they represent short-term effects only. The real impact on the audience, the compliance of the offered cultural services with their expectations and insufficient funding for investments will only be felt in the following 3 to 5 years. As the OECD also noted in a recent study:

“The effects of the crisis on distribution channels and the drop in investment by the sector will affect the production of cultural goods and services and their diversity in the months, if not years, to come. Over the medium term, the anticipated lower levels of international and domestic tourism, drop in purchasing power, and reductions of public and private funding for arts and culture, especially at the local level, could amplify this negative trend even further.”

Inevitably, against the background of a downward trend, another extraordinary shock brought by the “black swan”, this time in the form of a virus, creates unprecedented pressure to think intensively and fight for the return of the audience in an increasingly complex and dynamic environment in an uncertain future. It is especially worrying that the challenges posed by COVID-19 in Latvia are playing out in the shadow of several long-term negative trends – a decline in the total population and in overall cultural consumption.

In addition to the traditional motivators for consuming culture, an unpredictably long-term demotivator has come into the force, i. e. the insecurity of the audience and the fear of attending public events. At the time of writing this article, the cultural and creative sector is in fact funded by the state through various support programmes. However, they are limited in time and will not be able to sustain the cultural and event industry in the medium term.

What is open data and what it can bring to the table

Although there are dozens of definitions of “open data”, they all seem to have a somewhat tautological explanation in common: open data are data that are open [e. g., Wessels et al. 2014]. It is similarly defined by the International Charter on Open Data: *“Open data is digital data that is made available with the technical and legal characteristics necessary for it to be freely used, reused, and redistributed by anyone, anytime, anywhere.”*

The OECD, which was in fact the first influential international organization to start adopting and advancing the idea of open government data, defines it as:

“data that can be freely used, re-used and distributed by anyone, only subject to (at the most) the requirement that users attribute the data and that they make their work available to be shared as well” [Ubaldi 2013].

In addition to the fact that the currently open data arrays have become incomprehensible to human analysis capabilities, these two basic features (freely available and usable) have a third feature, namely, the data is machine readable.

The relationship between cultural consumption and various specific products and socio-economic factors has been studied at least since Bourdieu's “Distinction: A Social Critique of the Judgement of Taste” [Bourdieu 1979], in which seemingly individual choices are determined by belonging to specific social and cultural fields. In Latvia, in the cultural and creative sector, a large part of decisions on production policy, repertoire direction, artistic choices and/or schedule of events have been based on individual decisions. They are usually related to artistic settings, institutional memory and the experience of each cultural content producer. Moreover, the dominant aspect is most likely the artistic one, i.e., the producers of cultural content in the public sector basically move in the direction determined by directors, artistic directors etc. It has not always met the expectations and behaviour of the audience, which is often characterized by the simple phrase “somehow it didn't work out...”

Currently, a new situation has emerged in which the usual decision-making algorithms are no longer efficient. The motivation structure of the audience, ticket-buying habits, basic principles of repertoire structure, visitors' expectations from the service have collapsed. Now the organization's decision-making structure has become more significant. What is more, the traditional economic and financial algorithms are no longer of use, which is currently creating additional financial instability.

In recent years, Latvia has made a really impressive leap in developing the availability of open data, currently moving rapidly upwards in various international ratings [e. g., OECD Open, Useful and Re-usable data (OURdata) Index 2019]. Namely, data and its accessibility that until relatively recently was described as a “new form of power” [Andrejevic 2014] are no longer available only to their holders, but increasingly to everyone. Undoubtedly, the public sector and its corporations are the largest subscribers and holders of data, and the data they hold actually includes everything from commercial information, taxes, public procurement, meteorological, socio-economic data, transport information, etc. The use of data in culture balances a very economic approach, which sees the use of data as an almost or magical ability to create added value, for example, by segmenting the audience on the basis of

data; replacement or support for human decisions, innovative business models and services, etc. [a typical data industry optimistic approach is represented, for example, by Beer 2018 or McKinsey Global Institute].

There is a much more sceptical approach in cultural analytics which refers to the use of data in cultural value analysis and audience as being “mythical” [Couldry 2014] or even quite “magical” [Appadurai 2012].

With the increasing availability of open and large data, its potential in cultural research has recently also become an increasingly important issue. More and more research in recent years has highlighted the use of big data, focusing on its dynamics and potential [Atique 2018], while also criticizing the so-called “profiling” users by their choice of cultural products [Cheney-Lippold 2011; Ashton, Gowland-Pryde 2019] and the still unresolved ethical issues related to data acquisition and processing [Boyd and Crawford 2012; Livingstone 2019].

Where we are

It cannot be argued that in Latvia, cultural operators and content producers are extremely passionate about data management and the use of open and large data. However, this seems to be typical not only of Latvia and the approach of the cultural sector to work with data is generally criticized as inadequate and outdated [Lilley, Moore 2013].

This is related to several really long-standing problems. Firstly, detailed audience research at the level of Latvian cultural organizations is still quite rare if not non-existent; secondly, culture-specific data is only partially available for automated processing; thirdly, significant investments in digital culture have been focused on the volume of digital content (a total of EUR 11.9 million has been invested in the ERDF co-financed project “Digitization of Cultural Heritage Content” during this EU funding period), and incomparably little attention has been paid to the needs of users of this digital content which seems to be explained by the simple assumption that “if there is content, someone will need it”; fourthly, the often limited staff capacity of cultural organizations themselves to work with the digital environment and audience. Some development has been observed relatively recently, following the approval of several national research programmes this year, which include both digital content research and re-use of data and solutions [namely: Cultural Capital as a Resource for Latvia’s Sustainable Development/CARD No. VPP-KM-LKRVA-2020/1-003; Digital Resources for the Humanities: Integration and Development No. VPP-IZM-DH-2020/1-0001].

Nothing seems to be as obvious about the underestimation of data as the situation in Latvia, where many cultural operators and content producers have voluntarily handed over their data to ticketing platforms, thus largely losing control

over this data and not fully gaining access to it. Only in recent years (mainly for financial reasons) we can see that some large public and private culture sector players are starting to develop their own ticketing and audience involvement platforms, such as the New Riga Theatre and the Latvian National Theatre. A similar trend is taking place in the private sector, for example, the music festival “Rīga Jurmala”.

The main motivation for working with data is based on the assumption that the data will help cultural content creators to identify patterns of action and to obtain meaningful information to address short- and long-term challenges effectively. From the point of view of the operator of the cultural and creative sector, the information contained in the data is of two types: the audience (the most important source here is the data of each organization about its customer and his/her behaviour), and, even more importantly now, data on what is not an audience, namely, who they are, their working hours, their movements, their place of residence, etc. This way open and large data allows to see audiences again [Livingstone 2019]. On the other hand, the purpose of data-processing factors influencing attendance, such as time, place and price, is focused on the audience and the decisions and offers of the specific consumer of the cultural event/product. The local player in the cultural and creative sector fights for the visitor’s free time not only with other leisure alternatives, but also with global platforms and social networks. And they lose in this fight because they do not play with the same tools they play with, since Netflix, Facebook, Spotify and YouTube already base their algorithms for content delivery on user-generated big data.

The use of data from the point of view of the organization of cultural content is mainly motivated and supported by the need to develop demand-driven products, reach new audiences or profile certain types of products for certain types of target audiences. The short end-of-summer season of 2020 clearly showed that it was commercially easier to sell events with a “taste of exclusivity” at a relatively high price than to try to sell a larger number of tickets at a low price.

There is also no doubt that the data are based on organizations’ funding systems and grant systems. Looking at the financing agreement of any theatre or concert organization with the Ministry of Culture, it is easy to see that the reporting mechanisms in the standard financing agreement consist of 26 data units in five different data groups (repertoire, audience, international operations, financial, technical and technological stability, others), including the average ticket price and the proportion of invitations to represent). Hence, the traditional data include units produced, consumers, sales volume, which basically do not significantly differ from any manufacturing company.

It is undisputed that data sets in any field are very large or that, due to its volume, it is possible to “benefit” from their automatic processing to determine the

correlations between such data carriers. Such processing is undoubtedly beyond human capacity and there is no doubt that if data is available, it should be studied [Manovich 2017]. It should be noted that relying only on open data results without other sources and methods (such as qualitative research methods) is likely to lead to distorted conclusions [for more on this, see, for example, Livingstone 2019; Couldry, Kallinikos 2017]. However, as mentioned above, time, space and place are objectively existing factors, which can be judged only in relation to the individual and not to society as a whole. Research into the activities of a particular individual in combination with the picture provided by open could provide a more realistic and objective picture. For example, Bail sees in the big data movement an instrument that can radically change the imbalance of cultural sociology between theory and data [Bail 2014].

What is more, the analysis of open data can take place only in the context of a problem, question or specific task. Without human analytical input and, most importantly, the ability to ask a precise question and/or task on the open data itself is of little help. Data are just hundreds of thousands of numbers arranged in spreadsheet columns. A critical component of data usability is its analysis, organization, problem solving and interpretation of results. As long as the data sets are large enough, there are sometimes really surprising features and coincidences [Martinho 2018].

Following the three basic features of open data (freely available, usable, machine readable), it can be concluded that the available “source” data on the open data portals available in Latvia correspond to them. Much of the data are related to specific location, traffic, time, and price-specific factors, which are components of the above “visit equation”.

Consider, for example, the venue and timing of the event/other cultural product or service. If “loss of motivation starts around the border one hour away from the place of residence” [Access to culture in Latvia: factors and possible solutions 2020: 27], geospatial data such as “List of intercity and local movements in GTFS format” intersected with the data set “Resident population in 100 × 100 m grid cells in cities and densely populated areas” allow to determine the potential “near-by” audience of the event. The same is valid for the timing and schedule. A natural reasoning behind the timing is to maximize potential audience. How to schedule the starting time of performances? Is it right that all performances start at about the same time – 19:00? Maybe if we play this competitive game, the winner turns out to be the one who determines, say, an hour earlier than the others?

The data-based approach to this question is based on both “closed data” available only to the organization itself and “open data” available to anyone. The “closed data” is indispensable to reveal the trend (correlation between ticket purchases and changes in audience size on different days of the week with different time schedules of the

event). However, if a negative trend is observed on any of the relevant days or times (to put it simple, “timing” obviously does not meet the expectations of the audience and their daily rhythm), “open data” should be used to find a more precise and data-based answer for a better timing.

For example, the least attended performances of the Latvian National Opera and Ballet are on Sunday evenings. This trend is regular regardless of repertoire, genre or artistic content. Obviously, one of the obvious reasons behind poor attendance might be assumption that due to the length of opera/ballet performances (they often tend to end only after 22), the audience does not want to go home so late after the performance, given that the next day – Monday is the beginning of the work (and school) week.

In this case “open data” on “E-ticket validation data in *Rīgas Satiksme* public transport” routes and “Migration of the employed population between the actual place of residence and the place of employment” combined with data array on resident population in 1×1 km grid cells (within walking distance) can reveal much more precise answer based on natural movement of potential audience at any time of the day than a subjective opinion of the event’s producer.

Conclusion

The cultural and creative sector is currently facing unprecedented pressure. It is no secret that more and more companies and players in the commercial sector support decision-making and knowledge creation by calculating what is metaphorically called “open and big data”.

In Latvia, the cultural sector has traditionally relied on the institutional memory of the organization and the everyday decision-making mechanisms that are no longer in place. Open data can expand accessibility and improve existing cultural services by identifying both potential audiences and service delivery, such as time and place of events. Data-driven future decisions can work in culture to anticipate and build new sales and accessibility patterns.

For this to happen, a fundamental change in thinking is needed. This is not so much a question of investing money as it is a mode of thinking and recognizing that data can and should add a better quality to everyday decisions. Most of the open data is already available for free, or free programmes are available to process it. What it requires, both at the level of internal data generated by the organization and at the level of external open data, is to see the value of the data and build decision-making systems that are based, at least partially, not on individual opinions but also on data, especially audience. This would lead to a better understanding of the place of the products created, not only in space, time and place, but also in the field of cultural/social capital. In addition, it offers a tool to measure both economic contribution

and non-economic indicators of cultural and social capital growth, which are also directly linked to cultural activity. Ultimately, the use of open data has not only financial benefits, but also the creation of new products and forms of cultural value. Personalized products are becoming more and more the norm, the cultural and creative sector has a unique standing point to gain from this game.

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