IF CRISIS COMES Susann Johansson, Linnéa Mähler

Faculty of Librarianship, Information, Education and IT, Borås (SWEDEN)

Abstract

Since a worldwide pandemic is a new phenomenon in the modern era, the outbreak of COVID-19 during the spring of 2020 resulted in Swedish libraries having to restructure their daily operations regarding the physical library and in-person services. The purpose of this paper is to present how the university libraries in Sweden responded to the imposed government directions. While reviewing several universities' crisis plans, it became apparent that guidelines for pandemics were missing: this in turn led to different solutions for each university libraries in Sweden were, and how the libraries fulfilled their obligations to patrons and society while working under the directions from Folkhälsomyndigheten (the Swedish National Healthy Agency).

Data regarding the libraries' responses to the pandemic was collected from each library's website; all data was collected on the same date, to make comparisons between the different libraries possible. The data was then analysed using quantitative content analysis, where the actions taken by the different libraries were sorted into a number of predetermined categories. These categories were determined using information from crisis plans, The Swedish Higher Education Act (1992:1434), and actions taken by libraries during previous pandemics. Among the study's findings are drastically reduced opening hours and the conversion of a majority of in-person services to digital services. Earlier studies in the United States indicate that libraries need reliable e-learning systems and digital platforms in case of a worldwide pandemic, as well as guidelines for the acquisition of new software and digital services. The findings of this study indicate that such systems are already in place at a majority of Swedish university libraries, which made the transition to digital services smoother.

This paper provides insights into the different actions taken by the university libraries in Sweden during the COVID-19 pandemic, and how these actions affected the daily operations for university libraries all over the country. The study can therefore be used as a basis for further studies regarding assessments of different approaches to crisis, and for determining what course of action to take in a future similar crisis.

Keywords: COVID-19 pandemic, digital services, university libraries

INTRODUCTION

The COVID-19 pandemic has had a pronounced effect on society, both internationally and in Sweden. During March 2020 restrictions on on-campus higher education were introduced, which forced upper secondary schools and universities to switch to digital distance learning. Other restrictions included capping gatherings at 50 people, and the Public Health Agency of Sweden encouraged the Swedish population to practice social distancing (Folkhälsomyndigheten, 2020a, 2020b, 2020c, 2020d). These restrictions both impacted the teaching at universities and had an impact on the operations and services of the university libraries.

These types of restrictions have never been implemented in Sweden in the modern era. During the 1957-1958 flu pandemic and the 1968 flu pandemic, hospital visits were restricted and vital societal functions such as mail delivery, communications, and public transport were affected when large numbers of staff fell ill. Schools were closed a couple of days during the 1957-1958 flu pandemic, and retired teachers returned to work to cover for bedridden colleagues. In

comparison, the 1968 flu pandemic only had a mild societal impact (Elgh, 2007, pp. 618-619).

A review of earlier research provided examples of restrictions on libraries in the US and Mexico during the Spanish flu in 1918, and the swine flu pandemic in 2009. Libraries or library sections were closed and reading spaces were removed during the Spanish flu (Quinlan, 2007, pp. 51-52). Similar restrictions were put in place during the swine flu, with the added recommendations of urging the population to keep distances while visiting public libraries (Lärarnas tidning, 2009; von Hall, 2009). With the threat of the swine flu pandemic looming in 2009, Wake Forest University reviewed their emergency plans and updated them to include pandemic guidelines. Included in the guidelines were instructions on how the library should assist students if they could not access the physical library, how the staff should act if the campus is placed under quarantine, and how to operate while low on staff and resources (Fansler & Daugman, 2013, pp. 19-20). Other points to take into consideration were outlined by librarians at the University of Minnesota: reliable digital learning systems and other digital resources must be in place to ensure continued education and library services, as well as guidelines regarding purchases of new technology or digital solutions (McGuire, 2007, pp. 8-10).

Universities included in the Swedish Higher Education Act (Högskolelag, SFS 1992:1434) must provide library services, according to the Swedish Library Act (Bibliotekslag, SFS 2013:801, 12§). These services were impacted due to the scope of the pandemic and the government restrictions. Furthermore, national guidelines on how universities and their libraries should act during a similar crisis are missing. Local university plans only account for sudden deaths occurring on campus, robbery, and bomb threats (Högskolan Dalarna, 2015; Högskolan i Borås, 2019; Karlstads universitet, 2010; Linköpings universitet, 2017; Malmö universitet, 2019; Umeå universitet, 2018). The COVID-19 restrictions therefore had to be interpreted by each university, and led to a multitude of different actions by the university libraries. Since this is a unique situation, no research has been done on the subject, meaning there is a knowledge gap in how the university libraries have handled the government restrictions.

PROBLEM STATEMENT, PURPOSE, AND RESEARCH QUESTIONS

Swedish university libraries are a part of their respective university organisations, which in turn are independent authorities. According to The Swedish Library Association, the purpose of these academic libraries is to provide students and scientists with reference literature and help with information seeking or services relating to studies, research, and publication (Svensk biblioteksförening, 2017, pp. 23, 29). Due to this organisational structure, it is up to each university and its library to make their own decisions as to what actions to take during the COVID-19 pandemic. As a result, the organisations must balance their obligation to provide library services to their patrons with their need to follow government restrictions and recommendations. Since there are no overall guidelines on what measures to implement, there is a lack of insight into the actions of each university library. This information could be the key to establishing pandemic guidelines once the pandemic is over.

The purpose of this study is to analyse how the university libraries have adapted their daily operations in concordance with government restrictions during the COVID-19 pandemic. The results may assist with the development of suitable measures for future pandemics.

This has led to the following research questions:

- How have the university libraries' operations and services been impacted by the COVID-19 pandemic?
- How do the university libraries fulfil their obligations to their respective universities while enforcing the government restrictions?

METHODOLOGY

The universities selected for the study were the thirty-one universities outlined in the Swedish Higher Education Ordinance (Högskoleförordning, SFS 1993:100). Several universities have more than one library, with branch libraries spread over large geographical areas. In order to make fair comparisons between the university libraries, one library has been chosen for study from each university - in most cases the main library.

The study was conducted through quantitative content analysis of the university libraries' websites. Data regarding changes to the library operations was collected from the websites on April 16 2020; screenshots were taken in order to make the findings verifiable. The discussion and conclusion of this study therefore reflect the restrictions and measures in place at that particular point in time. The study will not be able to provide a complete account of all actions taken during the entirety of the pandemic. One or several follow-up studies will be needed in order to assess all measures and their impact once the pandemic is over.

The collected data was used to develop a coding scheme (Appendix 1) with the following parameters: "Opening hours", "Study help", "Access to study rooms", "Changes to loan rules", and "Changes to overdue charges/return demands". A pilot study using these parameters was conducted, in accordance with recommendations set by Boréus & Bergström (2018, pp. 59-60) and resulted in changes to two parameters: "Access to study rooms" was modified to "Access to study environment" and "Changes to loan rules" was replaced by "Access to material". For "Opening hours", the total number of opening hours per week were noted for each library (for normal operations and during the COVID-10-pandemic as of April 16), and staffed and unstaffed hours were separated. The other four parameters were coded with numbers. Each number was translated to a colour scheme, where green indicates no changes made to that particular parameter and red indicates measures taken that had a high impact on that parameter. These codes were then converted into a heat map (Table 1, see below). The coding for each parameter was determined as follows: "Study help" (1=No changes, 2=Limited study help in-person, extended digital study help, 3=Only digital study help, 4=No study help offered), "Access to study environment" (1=No changes, it is possible to study at the library, 2=The study spaces at the library are closed), "Access to material" (1=Patrons can collect their material from the library shelves, 2=Material is exclusively handled by library staff/Reservations only, 3=No loans permitted), "Changes to overdue charges/return demands" (1=No changes, 2=Overdue charges have been removed/Return demands have been revoked).

Both Boréus & Bergström (2018) and Bryman (2018) discuss the limitations of quantitative content analysis, and a number of these are worth considering within the context of this study. Bryman (2018, pp. 380-381) points out that it is virtually impossible to design a coding scheme free from interpretation, and that quantitative content analysis may obscure some differences within the data. Two of the problems for this study were the risk of misinterpreting data if the universities used different expressions for the same measure and the lack of information regarding services during normal operations. We have tried to eliminate these problems by searching for date stamps or descriptions on the websites that indicate that changes have been implemented. In isolated cases we have used Internet Archive (https://archive.org/) in order to verify that changes have been implemented due to the COVID-19 pandemic and not due to other circumstances. Double coding was implemented in order to ensure a high interrater reliability and uniform coding of the data (Boréus & Bergström, 2018, p. 61).

RESULTS

The findings of the study are presented and discussed below. The first two figures relate to changes to opening hours and the distribution between staffed and unstaffed hours. Thereafter, the other parameters studied are analysed and discussed through the use of a

heatmap (Table 1).



Figure 1. Changes to total opening hours per week for all thirty-one university libraries.

Fig. 1 demonstrates the combined total opening hours per week for all thirty-one university libraries during normal operations (2165.5 hours/week) and during the COVID-19 pandemic as of April 16, 2020 (987 hours/week). The figure shows a reduction in opening hours (both staffed and unstaffed), with a noticeable reduction in staffed hours. The reduction in unstaffed hours is not as noticeable as the reduction for staffed hours since several libraries increased their unstaffed hours while simultaneously reducing their staffed hours. This has led to a shift in distribution between staffed and unstaffed hours; during normal operations 73% of all opening hours are staffed, in comparison to only 46% during the COVID-19 pandemic (Fig 2.).



Figure 2. Changes to distribution of staffed and unstaffed hours.

These numbers seem to indicate that the universities are reducing the amount of time their staff frequent the premises during visiting hours, while keeping the library open for patrons in order to fulfill their obligations to offer library services. These precautions are also evident in the solutions for handling printed material (Table 1). Several libraries have closed down their premises and are only open for reserved material pick-up, thereby limiting the ability of groups of people to gather.

Table 1. Table of the universities and the impact of the COVID-19 pandemic on services, where greenindicates no changes and red indicates changes with a high impact to that service. The two white fields forGIH The Swedish School of Sport and Health Sciences, and Stockholm University of Arts indicate that theydo not offer study help during normal operations.

University	Study help	Access to study environment	Access to material	Changes to overdue charges/return demands
Uppsala University				
Lund University				
University of Gothenburg				
Stockholm University				
Umeå University				
Linköping University				
Karolinska Institutet				
KTH Royal Institute of Technology				

University	Study help	Access to study Access to environment material		Changes to overdue charges/return demands
Luleå University of Technology				
Karlstad University				
Linnæus University				
Örebro University				
Mid Sweden University				
Malmö University				
Swedish University of Agricultural Science				
Blekinge Institute of Technology				
Swedish Defence University				
GIH The Swedish School of Sport and Health Sciences				
University of Borås				
Dalarna University				
University of Gävle				
Halmstad University				
Kristianstad University				
University of Skövde				
University West				
University of Arts, Crafts and Design				
Royal Institute of Art				
Royal College of Music				
Mälardalen				

University	Study help	Access to study environment	Access to material	Changes to overdue charges/return demands
University				
Stockholm University of Arts				
Södertörn University				
No changes			High	nimpact

On most parameters many different actions can be discerned (Table 1). Access to study environment ranges from completely closed off study environments to nearly no restrictions at all. This mirrors the different measures taken in the US during the Spanish flu, where some libraries were closed while others kept open but limited patrons' ability to gather in groups (Quinlan, 2007, pp. 51-52). Almost all libraries with closed-off study environments also have some restrictions in place regarding access to material. This is not surprising: if the library is open for patrons to study there, it makes no sense to prevent patrons from collecting material themselves. Likewise, if material is only to be handled by staff, the study environments cannot be open for patrons, as it would be almost impossible to enforce the "staff-only" rule.

A number of libraries have chosen to extend return dates or void overdue charges, with several different approaches. Some libraries no longer allow reservation of items. We have interpreted this measure as a way of reducing visits to the library and ensuring that people infected with COVID-19 do not visit the library to return overdue items. On the other end, several libraries have opted not to change any rules regarding overdue charges and reserved items. These different approaches highlight the difficulties the university libraries have had in navigating government restrictions while fulfilling their obligation of providing literature to students and staff. While some have decided that restrictions and minimising the spread of infection trumps all other obligations, others seem to have concluded that precautions should be taken, but that students need to be able to access relevant literature. This leads to some interesting ethical conundrums: is it defensible to keep enforcing rules that might lead to sick patrons visiting the premises in order to return books? Should the library first and foremost fulfill their obligations to their university, or should national concerns govern the course of action? How do you balance these two approaches? Should the local severity of the pandemic play a role in determining how libraries respond?

These questions closely resemble ones that multiple governments across the world have had to ask themselves: what measures are effective and what level of intrusion into our way of living is acceptable? There is no definitive answer to this, and we suspect that these questions will be up for debate for years to come.

This study has been too limited to include comparisons between the measures taken and the geographical spread of the pandemic in Sweden at the time of data collection. This would have provided more insights into whether stricter measures were taken in areas where the toll of the pandemic was more visible. This would be a useful starting point for a follow-up study. Even though this has not been part of this study, some regional patterns have emerged in the data. Ten out of the thirty-one libraries are located in the larger Stockholm area (Stockholm University, Karolinska Institutet, KTH Royal Institute of Technology, Swedish Defence University, GIH The Swedish School of Sport and Health Sciences, University of Arts, Crafts and Design, Royal Institute of Art, Royal College of Music, Stockholm University of Arts, and Södertörn University), and several of these also have some of the strictest measures in place. There are outliers in this sample: the approach taken by GIH The Swedish School of Sport and

Health Sciences is very different from KTH Royal Institution of Technology, even though both are located in the same city. Where KTH has chosen more drastic actions, GIH The Swedish School of Sport and Health Sciences has made very few changes.

Two other outliers in the data are the universities in Halmstad and Kristianstad, which have not significantly altered their daily operations. Both still provide (some) on-campus study help and have their study environments open for students. This could indicate that the universities and staff felt they could conduct these services in a secure way, or that the pandemic impact in those regions was low at the time. It is also possible that providing these services was deemed essential by the universities. Further research into the matter is needed to gain insights into the reasoning behind these decisions.

Most libraries have continued to provide users with access to material either by access to the physical library via keycards, or by request via book pick-up (but not further access to the library rooms). Only four libraries, all located in Stockholm, have closed down to the extent that borrowing new material is not allowed.

There is one parameter where the libraries have taken an almost uniform approach: study help. Twenty- six libraries have decided to switch to digital study help, two offer some study help in the library and expanded digital services, and one library has stopped offering study help. This is the only parameter for this study where the libraries have national guidelines to follow, since the government has specifically recommended distance learning (Folkhälsomyndigheten, 2020c). The other three parameters, for which government guidelines are missing, show more varied results.

One of McGuire's (2007, pp. 8-10) conclusions was that libraries need a digital infrastructure in order to be able to offer service and support during a pandemic. The findings of this study seem to indicate that this was already in place at Swedish university libraries, since a majority shifted to digital study help (Table 1). It should be emphasized that this study is too limited to claim any causality between the national guidelines and the universities' actions in regards to digital study help. One of the quantitative content analysis' weaknesses, according to Bryman (2018, p. 380), is that it cannot identify or explain these kinds of causal relationships.

CONCLUSIONS

The collected data and review of crisis plans suggest that the level of preparedness for this type of crisis was low and that the universities have developed their strategies for combating the spread of infection as they went along, rather than relying on pre-established plans. A possible reason for these different actions could be the design of the Swedish Library Act. The Swedish Library Act is a framework law, with overall directives on what the libraries should provide access to. In relation to university libraries, the act only mentions that university libraries need to provide library services in connection to the education and research areas at the university in question (Bibliotekslag, SFS 2013:801, 12 §). This can lead to different interpretations of what services should be provided and to what extent. It should also be noted that it is up to each university to decide what services their library must provide to its students and researchers. A myriad of different solutions is therefore expected and has led to some libraries having made virtually no changes to the parameters studied (such as Halmstad University and Kristianstad University), while some have effectively ceased offering library services (The Royal College of Music). We can therefore conclude that the impact of the COVID-19 pandemic has been more severe at certain university libraries; in some cases, there are differences in severity between libraries in the same geographical areas. This begs the question: would more specific instructions from the government had resulted in all university libraries in a particular region interpreting these rules in similar ways, with the result of these institutions offering the same services?

In regards to our second research question about university libraries fulfilling their obligations to their respective universities, the libraries whose normal operations have been most impacted by the pandemic have for the most part found creative ways of continuing their services. Apart from four libraries, all libraries continue to provide access to material (whether patrons can collect it themselves or it can only be handled by staff) and nearly all switched to digital study help. Study help was the only parameter in the study directly affected by national guidelines, and the measures taken were therefore almost uniform, since no interpretation was needed. Further research is necessary to determine the best measures to use in response to pandemics and what effects reductions in different library services have on students and other patrons. Additionally, research on how the library staff were affected and how both staff and students experienced the restrictions on their respective work would be useful when evaluating the actions taken during the COVID-19 pandemic. This study could serve as a basis for this type of research.

As discussed in the results, the digital infrastructure needed to provide library services during a pandemic was already in place at Swedish university libraries, which minimised the impact of the COVID-19 pandemic. When operations are normalised, these digital platforms and technology solutions will need to be evaluated, and instructions on what to consider when purchasing new technology should be included in emergency plans, as per McGuire's (2007, pp. 8-10) recommendations.

This study would not have been possible if the digital infrastructure had not been in place, since all information on the actions taken by the libraries was collected from their respective websites. It is also possible, if not probable, that the websites have been the main source of information for students and staff. Many libraries marketed their digital resources as a satisfactory alternative when on-campus services were reduced or eliminated: a majority of the in-person services offered before the pandemic could still be offered through the digital platforms already in place. By transforming the analogue way of thinking into a digital solution, most services could continue as before, albeit in a new setting.

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APPENDIX 1 – CODE SCHEME

University	Opening hours per week (normal operations) Staffed/ Unstaffed	Staffed opening hours per week (COVID-19) Staffed/ Unstaffed	Study help	Access to study environment	Access to material	Changes to overdue charges/return demands

Coding instructions

Opening hours per week (normal operations) Staffed/Unstaffed

Number of staffed hours per week during normal operations/Number of unstaffed hours per week during normal operations

Staffed opening hours per week (COVID-19) Staffed/Unstaffed

Number of staffed hours per week during COVID-19 (as of April 16 2020)/Number of unstaffed hours per week during COVID-19 (as of April 16 2020)

Study help

"Study help" is defined as services relating to guidance in academic writing and information seeking

- 1. No changes to this service have been made
- 2. Study help is offered in a limited in-person capacity, extended services provided digitally
- Study help is only offered digitally
 Study help is not offered

Use o if this is a service not normally provided by the university

Access to study environment

- 1. No changes, it is still possible to study at the library
- 2. The study spaces at the library are closed

Acces to material

- 1. Patrons can collect their material from the library shelves
- 2. Material is exclusively handled by library staff/Reservations only
- 3. No loans permitted

Changes to overdue charges/return demands

- 1. No changes
- 2. Overdue charges have been removed/Return demands have been revoked

Use 2 if the library has extended all loans - no overdue charges/return demands will be generated.