

THE DIGITAL LANDSCAPE

A View from the Library

*Trends and challenges facing the
21st century academic library*



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I INTRODUCTION

There is no progress without change, and change is not always easy. Digital transformation is driving change in companies and organisations the world over, on an unprecedented scale. On a personal basis, digital technology is impacting our daily lives in a great many ways. Academic libraries are by no means alone in facing major challenges in the current technological environment.

...today

Technological advances are transforming academic libraries. In the midst of this constantly evolving environment, libraries need to ensure that they are still relevant to their users. This is often at the forefront of industry commentary, reflecting the importance and the scale of the challenges. However, there are gaps in the commentary - this research seeks to fill these gaps, revealing areas where libraries must take action in order to provide a thorough service in a world which is increasingly impacted by developments in digital technology.

...the future

It is important to establish the challenges faced not only in the current technological environment, but to look further ahead into the future as well. Change and progress do not stop here, so an insight into things to come is crucial in order to stay abreast and move with the times.

THE ACADEMIC LIBRARY – WHAT'S IT FOR?



At the outset let's consider what the purpose of the academic library is. The library's purpose could be broadly interpreted as *supporting users with timely access to high quality information and services for the advancement of learning, teaching and research*. The majority of librarians broadly agree with this statement, with individual emphasis on the provision of information or services. With services ranging from literacy education to research support, it is clear there is variation from library to library, but the main role of supporting the institution remains the same.

But how far has this changed due to digital technology? Will future developments redefine the library's role?

METHODOLOGY

The picture emerging in this paper is based on research into the state of the industry, alongside an online survey of over 2,200 academic librarians. This was supported by in-depth follow-up interviews with librarians to further explore key areas.

Demographic

Almost all survey respondents were based in advanced economies, 85% of them in the US, and 12% in the UK.

Overall figures are also weighted towards more experienced librarians. 31% of respondents had worked in academic libraries for over 25 years, and 77% for longer than 10 years. Whilst views may be less representative of librarians who are new to the industry, those with more experience to draw on are maybe in a better position to comment on changes both past and present.

It is important to bear in mind that responses may vary according to the type of institution to which a library is attached. Libraries in larger universities will function in a different way from a library belonging to a smaller school of higher education.

TRENDS

There was an overwhelmingly positive reaction to the impact of digital developments on the library over the past five to ten years, as it has in many ways facilitated the librarian's role as well as the user experience. Information is available at any time and place, at the click of a button, as is assistance from the library. The majority of librarians report sufficient support and engagement from their institution in response to the impact of new digital technology. This has resulted in the majority having found positive impacts on discovery, collection development, developing new skills, and also relationships with colleagues, repurposing space, and investment in new equipment.



Most importantly though, library use has increased, with the analysis showing that this increase is driven by a variety of different uses and services.

74%

SAY USAGE OF LIBRARY CONTENT
HAS INCREASED

There is access to many more resources online, and the development of new discovery tools has made access to these resources easier than ever before. There is also a distinction between the increased use of the library as a physical space, and that of library collections. Driven by digital development, the space is used in a variety of ways because collections can be accessed in a variety of ways, including remotely, fueling a rethink of how the library is used by patrons. It is therefore unsurprising that the majority of librarians (75%) expect half to most of their collections to be digital in the next 5 years, and 88% say patrons expect information to be available digitally. This is particularly pronounced in areas such as physical sciences, engineering, and law.

Priorities for collection development & management over the next 5 years

Respondents	Most Important	Somewhat Important	Least Important
Open Access repositories	34.90%	51.70%	13.40%
Improving the range of content available through collaboration with other institutions (consortia)	46.60%	40.50%	12.90%
Improved discovery tools	67.30%	27.90%	4.80%
Library Services Platforms (LSPs)	29.90%	50.00%	20.10%
Digital Preservation	29.20%	46.40%	24.40%

Librarians are becoming more involved in research data management, as they are required to make data available digitally to their users. However, there are still significant numbers of users in areas such as arts and humanities who prefer print resources, for reading longer texts or for highly visual art and architecture titles.

“Other than the humanities there is a disinterest in paper sources, only digital”

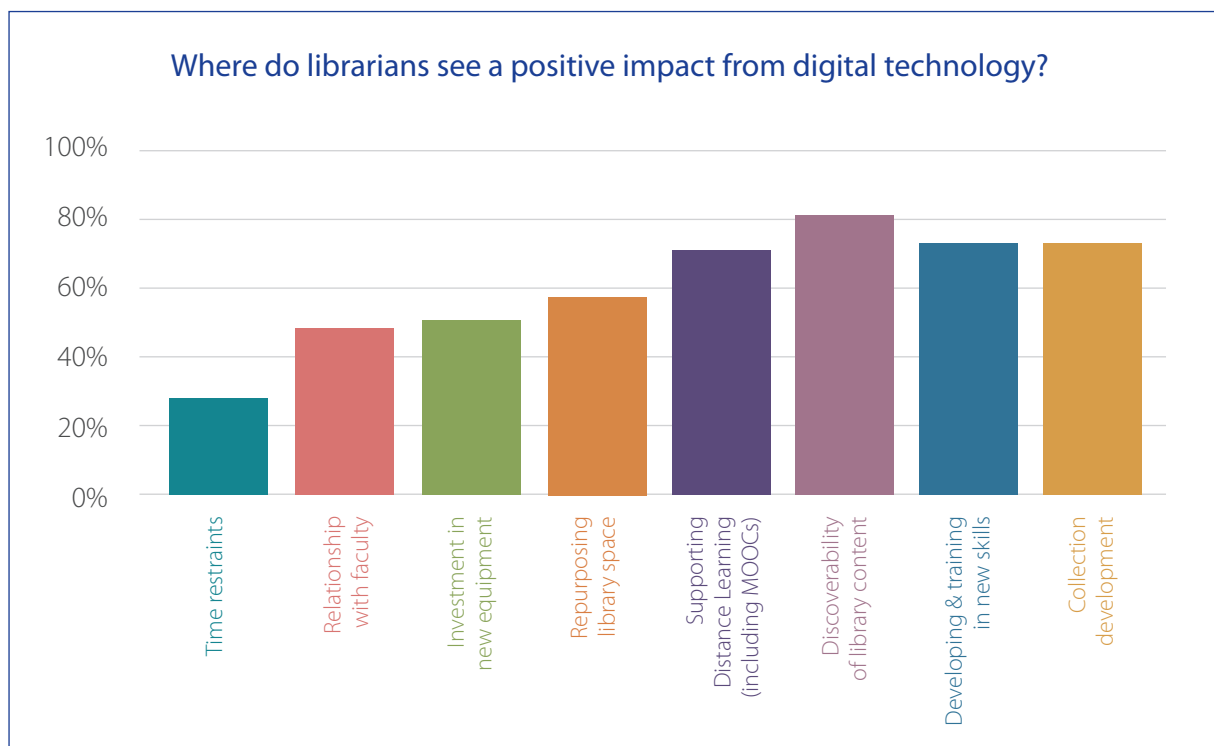
Traffic

SCONUL's report, *Mapping the Future of Academic Libraries*,¹ highlighted a major trend in the shift of academic libraries' strategic emphasis from collections to services. Their inside-out role, in managing internally generated content for sharing beyond the institution, needs to become increasingly important. This role complements the traditional outside-in role: acquiring and managing externally generated content for consumption by their institution.

“We have moved from farmers working a plot of land to shepherds, guiding and caring for our community”

There is less traffic *through* the library as faculty and students access online information from home or where they happen to be working. With this change in user behaviour, libraries are more able to offer new services, such as teaching digital literacy, or providing research assistance, as well as help with scholarly publishing issues.

This has also proved fundamental in demonstrating the library's value to an institution, as explored in the white paper *Surveys, Statistics, Narrative*², which provided examples of institutions that had developed a space where students and faculty, no matter their needs, could use the library.



This demonstrates a positive story that both libraries and their parent institutions can tell about working collaboratively. Libraries have assisted users needing more and different services, but this assistance, largely driven by changes made possible by digital technology, is facilitated by adequate investment in new equipment, changes to space, and training in new skills. The positive impacts mentioned here and above are the direct result of positive and sufficient engagement from the parent institutions, working in collaboration with the library to address trends and issues being highlighted by changing behaviours.

Library space...

The library has a continued role as a physical place, but this is evolving to reflect user behaviour and needs.

Libraries are being encouraged to build a vibrant learning community to attract users back into their space, and are doing this by supporting learning activities, and providing group study space and workstations.

“The library is where learning continues – collaborative learning will shape the library of the future.”

What services do libraries need to provide?

96%

SAY DIGITAL
LITERACY TRAINING

99%

SAY HELP WITH CONTENT
DISCOVERABILITY

87%

SAY DATA MANAGEMENT
AND CURATION

95%

SAY ADMINISTRATIVE
ADVICE
(COPYRIGHT, LICENSING,
PRIVACY ISSUES)

How has the library space evolved?

83%

SAY LIBRARY SPACE HAS
EVOLVED TO SUPPORT
LEARNING ACTIVITIES

83%

OF SURVEY RESPONDENTS
SAY THEIR LIBRARY HAS
EVOLVED TO SUPPORT
LEARNING ACTIVITIES

100%

PROVIDE OR WANT
TO PROVIDE
GROUP SPACE FOR
COLLABORATIVE WORK

CASE STUDY: LIBRARY SPACE – COLUMBIA UNIVERSITY

Columbia University's Digital Science Center in the Science & Engineering Library³ consolidates and redefines the library space for the 21st century. Working with the university science departments, the library has defined a set of services to meet the research and teaching needs of university science programs, serving Biology, Chemistry, Physics & Astronomy, Mathematics, Geology, Geosciences, Psychology, and Engineering. The Digital Science Center incorporates state-of-the-art technology, high-end software, and research data sets for scientific analysis and visualization, alongside professional, discipline-specific consulting and support. Its resources include:

- over 50 advanced workstations with facilities to meet a wide variety of student needs
- group study spaces for collaborative work
- presentation practice rooms
- IT equipment including printers and scanners to support science-related work
- staff consultation spaces.

Teaching role...

As librarians are no longer purely gatekeepers to physical resources, they are becoming more involved in the *process* of teaching, and so further integrated into the core academic activities of their institution. With distance learning on the increase, many librarians are taking on support roles, servicing increasing numbers of students' information needs around the world, and at all times of the day and night. Their skills are crucial to the development of successful online courses, such as MOOCS, which are in turn vital to the future success of their institutions. Over the past 10 years, increasing numbers are taking on the role of embedded librarian, remaining actively involved throughout the length of the course.

OVER

80%

THINK THE LIBRARY SHOULD PLAY
A CRITICAL ROLE IN SUPPORTING
DISTANCE LEARNING COURSES

Advisors

The advent of Open Access has brought with it a great many changes to scholarly publishing. In theory it represents an easing of budgetary problems for librarians, and facilitates access to research. Librarians highlighted cost as one the key challenges facing their library in the next five years, particularly in collection development, and while Open Access may help ease some of these concerns, there are non-pecuniary impacts on library services being offered. For librarians it creates a new role as advisors to the research community, on the many copyright, licensing, and privacy issues that arise as a result of Open Access. For the vast majority of librarians, these are services already offered, but also deemed required for a successful library, especially for the near future. This paints a picture of a changing landscape with implications for librarians' responsibilities.

■ CHALLENGES



CHANGE IS NOT EASY

Despite the many positive outcomes for libraries in the face of advances in digital technology, many librarians participating in this research cited a number of significant challenges.

The majority of participants expressed a forward-thinking attitude, with only 11% citing any negative impact from developments in digital technology. However, more focused questions uncovered significant areas of concern for them.

New skills

The traditional librarian role is changing, and it is a challenge for libraries to utilize the expertise built up over many years in new ways. Librarians need new skills in a variety of areas.

Skills development or training required for successful libraries in the next 5 years

Digital Skills	90.80%
Usage Data Analysis	87.30%
Outreach Techniques	82.00%
Information Privacy	77.50%
Website Analytics	71.80%
Website Development/Maintenance	69.40%
Altmetrics	52.50%

Training for current staff in these areas is highly important for many librarians, who see constant Continued Professional Development (CPD) as essential to keep abreast of developments.

Cambridge University's Office of Scholarly Communication (OSC) says improved skill sets were required in data management and curation, in outreach to spread their message to researchers, and a better understanding of the publishing process was needed, although this should be taken as a team approach with members bringing a range of skills to their roles. There is caution against trying to become the mythical "unicorn librarian" with every skill, which is doomed to fail⁴.

Staff are being hired with these new skills, who are often "non-librarians" – such as developers, metadata librarians, scholarly communications librarians, or outreach specialists.

“The people you need in this job don’t even know they’d be right for the job as they don’t see themselves as librarians”.

However, recruiting these specialized staff is expensive, as they are often highly paid in corporations, and higher education isn’t able to offer these salaries. Bigger libraries are more able to recruit in specific areas such as data-driven jobs, but smaller libraries have to recruit more general staff to cover more areas.

Some librarians were less positive about training in new areas, as change is constant:

“Things change so fast it’s not really feasible to have formalized training in anything as it then changes again”

People skills were cited as extremely important, as the library is now required to be more proactive in marketing its services to users.

“Most important is having people with good soft skills – communication with faculty is so important...we can teach other skills internally.”

Charleston 2017 highlighted communicating value as a top trend. By “getting in” with faculty and embedding themselves in the classroom, demonstrating the correlation between library course involvement and student success, librarians can gain the trust of their users, which is vital in order to maintain funding levels⁵.

Google

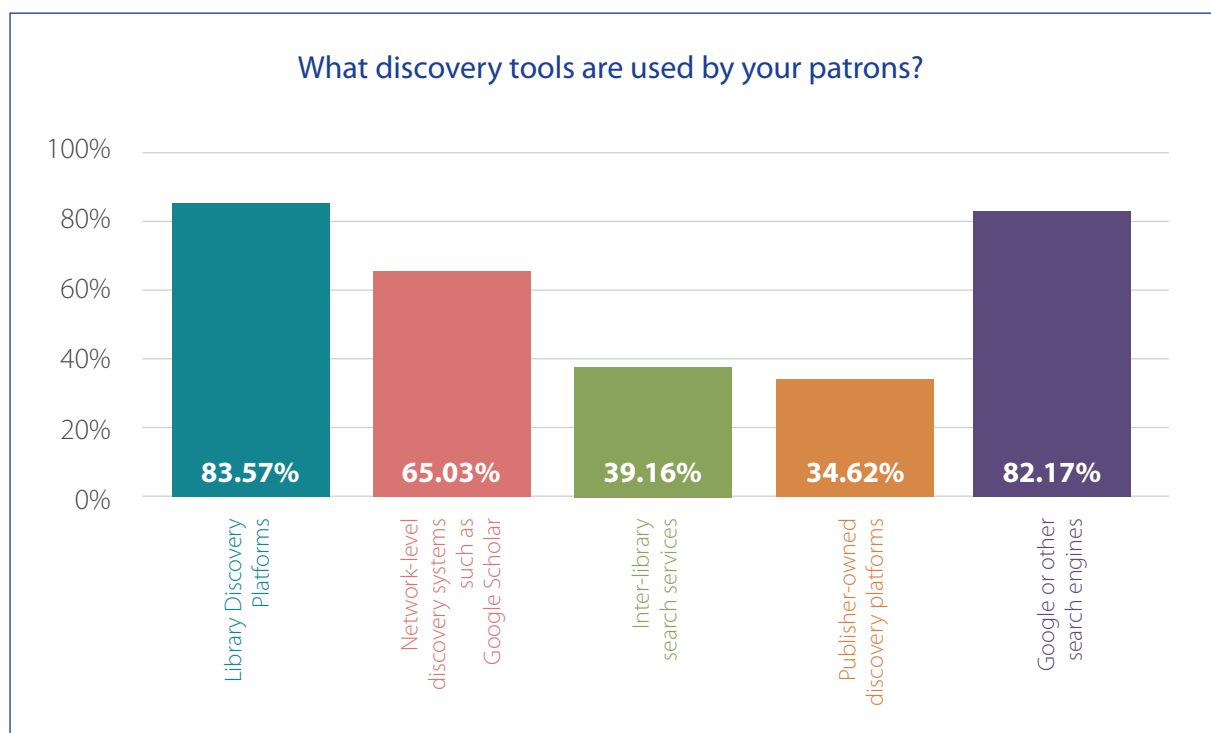
Despite a general increase in library usage, librarians still face a challenge in marketing library services to their users. Students find Google quicker and easier, as discovery tools haven’t reached a comparable level of ease of use or efficacy of results. Instead of using it as a starting point, many students stop there.

80%

OF LIBRARIES CITE LIBRARY DISCOVERY PLATFORMS AND GOOGLE AS THE MOST REGULARLY USED DISCOVERY TOOLS BY PATRONS

“Students prefer to use Google and we have trouble directing them to our subscription resources”

“I struggle to convince people to consume the broccoli: less-than-user-friendly-but-better-for-you library databases – instead of the candy: Google/Wikipedia.”



For librarians, promoting usage of their resources is crucial in order to justify the costs of purchasing them. As a result they are forced to engage in proactive marketing to persuade users to engage with their libraries' platforms, many of which are less user-friendly than Google, but which allow patrons to delve deeper. According to one librarian, *"Our 1st year training session is called Better Than Google"*.

Collections...

Many librarians cite access issues as a major challenge, that often proves very time-consuming. On the back of digital developments, multiple and complicated vendor platforms have emerged, as well as complex purchasing models and restrictive licensing. Many platforms necessitate training for faculty and students, which adds to existing time pressures for librarians. Linked with this is the huge challenge posed to libraries by mobile devices. Librarians are constantly being asked for delivery of resources in formats which do not match with what is available from the publishers or aggregators⁶.

The elephant in the room...

Significantly, librarians responding to this survey did not rank artificial intelligence as a major challenge now or in the foreseeable future. There is also little mention of it in the literature beyond the fact that it is hardly being talked about. Its low profile is highly significant as it indicates librarians are not facing up to this challenge, which is without doubt going to be a major disruptor to the industry. According to SCONUL's report, these gaps in awareness around AI and machine learning need to be addressed⁷.

Last but not least

In the face of all these challenges, it is clear that strong, positive library leadership will be crucial going forward. Libraries are living through an era of constant change, and in order to embrace these many challenges and remain relevant to their users, change needs to be well managed.

THE BUDGET CHALLENGE – where does this fit in?

Whilst library budgets are not *obviously* affected directly by digital advances, there are many ways in which they are affected indirectly. In fact for many librarians money is the number one challenge, and there is frustration with library admin who control the budget and often think libraries need less money as “everything is online”:

“...lack of investment in the library is lack of investment in the whole institution. With a stronger library it’s easier to recruit and maintain research staff and get grants.”

“There is declining respect for librarians”

Less money, to go further...

In the face of shrinking budgets, staff with new digital skills and experienced library staff are relatively expensive, and are often unaffordable for libraries, who need to keep abreast of new developments. As it is, many libraries are experiencing a lack of sufficient staffing.

Open Access theoretically offers the answer to libraries’ budget problems. But with differing levels of Open Access models, and no consistency across publishers, librarians face a tough challenge. Many librarians feel Open Access is not happening fast enough, and article processing charges (APCs) are an additional financial burden alongside subscriptions. Distance learning is leading to greater student numbers, all of whom require use of the library’s increasingly stretched resources and services. Libraries are also under pressure to provide expensive IT equipment, such as laptops for students, in the digital environment.

87%

OF LIBRARIES ARE
PROVIDING LAPTOPS

95%

ARE PROVIDING PRINTERS
AND SCANNERS

I OPPORTUNITIES



The challenges faced by academic librarians are clearly not insignificant. However, for some librarians, the forward-thinkers, challenges are opportunities, and it is important to harness change rather than be driven by it:

“What we need most of all is a mindset of agility and positivity, not a problem-finding one”

The 2017 white paper *Surveys, Statistics, Narrative: Communicating Library Value to Administrators*⁸, explored how changes in library usage had led to changes in how the library space was utilized. As explored above, these changes are being largely driven by developments in digital technology that allow, for instance, remote access. Some enterprising libraries have repurposed their space for use by non-traditional library users, whilst 35% of respondents indicated they too felt that the provision of these maker spaces was an opportunity they should grasp.

Additionally, digital technology was felt to offer opportunities for greater collaboration and discovery. There is no doubt that digital tools have already had a dramatic impact on the accessibility of information, but there seems to be a further opportunity for improvement. Over 90% of librarians identified better discovery tools and expanding accessibility via consortia as a priority for them in the next five years.

THE WAY FORWARD



Will the academic library be redefined after the digital revolution? Should librarians be worried about its impact over the next 5 years? Will libraries cease to exist?

The views amongst librarians regarding the future of academic libraries demonstrate broad agreement around some core concerns, but also some less important considerations (across the industry as a whole) which vary on a library-by-library basis. Despite the confidence in the positive developments digital technology has brought to their profession, many librarians are worried. The pressures on them to remain relevant to their users in the constantly evolving digital environment are many and varied - updating their skills in order to provide the services their patrons require, navigating the sea of digital information, and all the time drawing their patrons in to keep the library a central hub of the institution.

However, over the centuries libraries have experienced many major shifts as learning processes have changed, and they have survived in one piece. Change is not new to them and today's digital advances are just another disruptive phase.

“We can't quit evolving or we will cease to exist – people will find other ways of getting the information they need”

Many librarians thought that, in this uncertain environment, the most important qualities going forward are being nimble, adaptable, and flexible, with a strong emphasis on people skills. Strong, positive leadership which embraces change is key. Throughout this research it has been obvious that how forward-thinking a library is depends greatly on the individual leadership.

Collaboration...

Collaboration with other institutions and professional groups is a certain driver for success. Groups including NoWAL (North West Academic Libraries), the M25 Consortium, and Germany's DEAL project all exist to enhance the delivery of services to users, including staff training courses, and the procurement of library materials.

There are multiple challenges which need addressing head-on for the library to survive as a valuable entity. The changes libraries are currently living through as a result of digital developments must be embraced, and exploited, for the future of research and education. Without high functioning libraries, institutions will cease to deliver world class education and produce world class research. It is down to libraries, and publishers, to embrace this change and seek the best and most progressive solutions.

87%

SAY COLLABORATION
WITH OTHER INSTITUTIONS
(CONSORTIA) IS IMPORTANT
IN IMPROVING THE RANGE
OF CONTENT

Given that the academic library has remained the central hub of institutions over the centuries, it is unlikely that it will be redefined. The library's mission will just be reinterpreted, finding new ways of fulfilling its role, which is to provide access to information when people need it. It is just the methods that are changing.⁹

*“The core of what we do will remain the same always. It’s just the way it’s done.
It’s about getting the right information to the right people at the right time.”*

REFERENCES

- ¹ <https://sconul.ac.uk/sites/default/files/documents/SCONUL%20Report%20Mapping%20the%20Future%20of%20Academic%20Libraries.pdf>
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- ⁸ Surveys, Statistics, Narrative: Communicating Library Value to Administrators (Taylor & Francis, 2017); retrievable from www.routledge.com/posts/12866
- ⁹ <http://www.ucl.ac.uk/scholarly-communication/articles/beij.htm>

White Papers Available

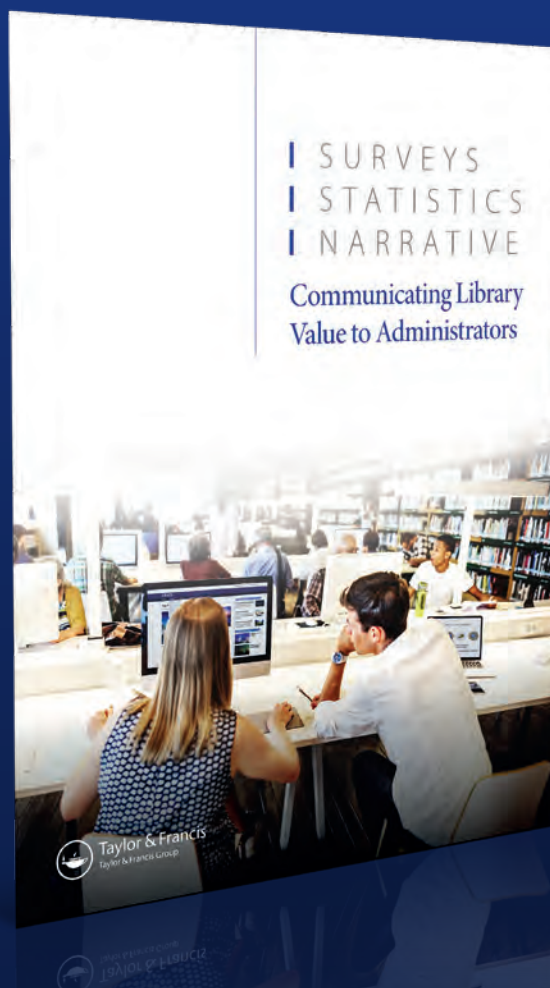
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Working in partnership to create an expanded perspective on our communities
– sharing trends and themes that broaden the discussion and inspire new ideas.



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