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E-Book Perceptions and Use: A Longitudinal Follow-Up Study

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abstract: This article describes the results of a survey that gathered data on perceptions and use of e-books from undergraduate students, graduate students, faculty, and staff at two Maryland research universities in 2019. It follows two previous surveys in 2012 and 2014 by the same team of investigators, with slight changes in personnel, and compares results across time, by user affiliation with the university, and by STEM versus non-STEM disciplines. The study concludes with a discussion of the major findings and their implications for academic libraries and publishers, as well as areas for further inquiry.

Introduction

In the spring of 2012 and again in the fall of 2014, the investigators surveyed library users from the University of Maryland in College Park on their perceptions and use of e-books. Participants in these surveys represented a range of subject disciplines (STEM and non-STEM) and affiliations with the university (undergraduate students, graduate students, faculty, and staff). As might be expected, they had a wide variety of opinions on the general suitability of e-books for their research and on what an academic library should purchase to support its users' research needs. In the years since the first study, e-books have continued to receive significant attention within the library literature. Few, if any, longitudinal studies, however, have documented the evolution of e-book preferences and opinions over time. The present study aims to fill this gap by revisiting research questions from the previous studies, including:



- Do (or how often do) faculty and students identify, access, and use e-books for academic purposes?
- For what types of resources (for example, monographs, edited collections, conference proceedings, or reference works) do faculty and students prefer their academic library to buy e-books? For what types of resources do they prefer their library to buy print books?
- How do the use and attitudes of respondents in science, technology, engineering, and math (STEM) disciplines compare with those of respondents in non-STEM disciplines?
- How do the use and attitudes among University of Maryland (UMD) respondents in 2019 compare with those from the previous e-book surveys of 2012 and 2014?
- What other comments do UMD faculty and students have about finding or using e-books at UMD Libraries?

The previous studies had a noteworthy limitation in that all data were collected from a single site, which potentially limited the generalizability of the findings. To address this limitation in the 2019 study, the survey was expanded to include a second research university, the University of Maryland, Baltimore County. In all, the survey received more than 2,900 complete responses from users at the two universities.

This paper opens with a description of the two research universities where the survey was distributed and provides a narrative literature review discussing recent trends in academic libraries within collections management broadly and e-book acquisition and

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licensing models specifically. The paper then describes the survey methods used, presents an overview of the demographics of the participants, and shares some of the most meaningful results gathered. The data collected show a sophisticated and evolving understanding of e-books among academic library users, which has changed significantly from previous sur-

veys. The investigators' analysis of these data will be valuable to academic librarians attempting to build collections in an increasingly complex landscape of e-book options. Additionally, the findings will be useful to librarians involved in negotiating with publishers to ensure that e-book platforms and business models are usable, equitable, and sustainable. The paper closes with suggestions for further research, specifically how the emergency remote access experience brought on by the COVID-19 pandemic may have affected opinions about e-books.

Institutional Context

The University of Maryland, College Park (UMD) is a major public research university in College Park, less than 10 miles north of Washington, D.C. It is the flagship institution of the University System of Maryland and offers 102 undergraduate majors and more than 200 graduate degrees through programs in 12 colleges and schools. The university has a total enrollment of over 40,700 (30,875 undergraduate and 9,834 graduate), a faculty of 4,264 (3,344 full-time, 920 part-time), and an additional staff of more than 10,000.

The University of Maryland, Baltimore County (UMBC) is also a public research university and part of the same University System of Maryland. Approximately nine miles southwest of downtown Baltimore, it offers 55 undergraduate majors, 72 graduate

degrees, and more than 70 certificates through programs in seven colleges and schools. The university had a fall 2020 enrollment of 13,497 (10,932 undergraduate and 2,565 graduate). It places a high emphasis on diversity and has a minority enrollment of 52.1 percent. The instructional faculty numbers 931 (555 full-time, 376 part-time).

Literature Review

The 2014 e-book survey expanded upon the 2012 survey by opening the study to respondents from across the entire University of Maryland, College Park, regardless of discipline or affiliation with the university.¹ The 2014 study sought to assess whether users from STEM disciplines held significantly different opinions from those in the humanities and social sciences. It largely found that the type of resource (for example, monograph, conference proceeding, or reference title) often better predicted a user's preferred format than did the user's affiliation with the university. In 2014, many researchers still preferred print for such resources as scholarly monographs, but survey participants had begun to show signs of "at least losing their resistance to [e-books] and clinging less tightly to printed books."² Opinions about e-books shift constantly, however; not only do user perceptions change over time but also e-book platforms evolve. Consequently, even the best-designed e-book studies at best provide "a snapshot of platforms at a certain moment" rather than definitive, lasting depictions of users' preferences, suggesting the need for periodic reassessment of user choices.³

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Changes to E-Books

The once and future "serials crisis," with its decades of subscription price increases and the attendant transformative agreements⁴ and governmental mandates,⁵ seems poised to remain at the center of discussions about the future of scholarly communications for a fourth consecutive decade.⁶ The landscape of scholarly e-book publishing, on the other hand, has changed dramatically since the 2014 survey. Elsevier's expansion into this market, through its acquisition of and continued investment into e-book platforms, such as Knovel for science and engineering and ClinicalKey for medicine and nursing, reflects the market's immense growth since about 2015. In addition to acquiring the content for these e-book collections, Elsevier developed stand-alone mobile applications for both platforms to provide users with direct access to these resources.⁷ Accompanying the mobile applications were customization options and invisible user data collection, which are often absent from library discovery layers.⁸ These expansions by commercial publishers have coincided with increased investment and exploration of models for open access (OA) e-monographs. Through this process, advocates for and publishers of OA e-monographs have encountered some of the same barriers facing OA journal publishers: limited discoverability in library catalogs, inadequate researcher buy-in, as well as ever-elusive sustainable funding models.⁹



Broader Changes in Monograph Collections

These developments in e-book platforms and publishing models have unfolded within the context of broader changes to how academic libraries select books and monographs for purchase. Since the 2014 study, more libraries have explored or adopted two complementary collections strategies: e-preferred book purchasing and demand-driven acquisitions. E-preferred book purchasing (*e-preferred* hereafter) refers to arrangements that call for the library to buy electronic versions of books, rather than print, by default. With demand-driven acquisitions (DDA), rather than a librarian buying books individually, book purchases are initiated by users discovering and accessing an item using the library's discovery layer.¹⁰ The increased popularity of these models has caused some controversy.¹¹ While many discussions have focused on practical matters, such as how to manage or prevent excessive purchases by patrons,¹² others have argued that DDA is antithetical to the very core of librarianship. William Walters contends that DDA diminishes the role of the librarian and predicts that by catering to "students' immediate desires," it will lead to library "collections that are biased or poorly balanced."¹³

While the jury remains out on how DDA may affect librarianship and library collections, recent studies have shown that books purchased using e-preferred and DDA models perform increasingly well in terms of usage data when compared against print books purchased by firm orders, one-time orders for specific titles that the library wants.¹⁴ Usage data analyses provide relatively shallow insights into users' experiences, however; the data do not reveal how substantive any given use is and do not capture a user's experience of interacting with the item in that format. To further complicate matters, academic libraries increasingly rely on usage data provided by publishers, which have been shown to have questionable validity.¹⁵ Most crucially, usage counts do not reveal whether users know that the e-books they access are provided by their academic library, a gap in user knowledge that was discovered during the 2012 and 2014 surveys.¹⁶ With libraries increasingly needing to demonstrate to university administrators their impact on the institution's "distinctive signifiers of excellence,"¹⁷ libraries must ensure that they communicate how and when patrons benefit from the library's services.¹⁸

For some institutions, e-preferred and demand-driven acquisition models may signal a necessary response to shrinking or flat collections budgets, and underscore the changing roles of academic libraries. The University of Houston Libraries in Texas described changes to their collections strategy as moving "from speculative to responsive" acquisition, with implicit recognition that the role of an academic library is increasingly not about building a collection for the ages, but rather about providing researchers with the exact materials required at the time of need.¹⁹ Often described as a switch from just-in-case to just-in-time collections management,²⁰ this example indicates a philosophical shift within many research libraries. Immediate, possibly temporary, access to materials that meet institutional curricular and research needs has become preferable to perpetual ownership of comparatively fewer materials that may fall out of alignment with institutional priorities at a later date. Michael Levine-Clark notes that while this change was gradual, "Libraries are now at the point where they have become comfortable with only licensed access . . . because they can provide access to far more content at a far cheaper price than perpetual access allows."²¹

These broader systemic changes have not just revised how collections are purchased within research libraries but also altered who makes the purchasing decisions in many cases. The role of the subject-specialist liaison librarian has attracted considerable scrutiny in the last decade, with many in the literature suggesting that the do-it-all approach is overly optimistic and unsustainable even in the best of circumstances.²² As part of efforts to make these roles more realistic, one function often removed from the responsibilities of subject liaisons and recast as a separate position is the job of managing library collections.²³ Perhaps nothing better signifies these changes than the reframing and renaming of the departments and positions charged with the responsibility for these areas. Gone are collection development departments staffed by bibliographers or liaisons; in their stead, academic libraries have created collections strategy departments comprised of collections strategists.²⁴

Ongoing Issues: Usability and Accessibility, Pricing and Licensing

While considerable changes have occurred within academic libraries' collections broadly and within the e-book landscape in particular since the 2014 study, other things have remained the same or have continued to develop in the same direction. The 2012 and 2014 surveys examined e-reader ownership, finding that by 2014, "Users no longer seem to view e-reader access as a necessary step for using e-books."²⁵ In the subsequent half-decade, the increased ubiquity of smartphones and other Internet-connected devices dramatically increased potential access points for reading e-books, with Apple reportedly selling approximately 185 million iPhones and 45 million iPads in 2019 alone.²⁶

Some of the main perceived benefits of e-books reported by respondents to the 2014 survey involved e-books' increased functionality over print books. In addition to the obvious benefit of remote access, users expressed an appreciation for the ability to conduct full-text searches of an e-book's content to find relevant information quickly. An additional purported advantage of e-books often discussed by vendors is their increased accessibility for readers with limited vision; however, progress in this area has been mixed. While EBSCO and other e-book vendors have a stated goal of complying with industry standards such as the Web Content Accessibility Guidelines (WCAG) 2.0,²⁷ e-books published in a PDF-only format often perform poorly with many screen readers, which limits the accessibility of any PDF-based platform.²⁸

One major source of frustration reported by respondents to the 2014 survey was how often they encountered "difficulties navigating the perplexing combinations of interfaces and digital rights." Respondents specifically noted the importance of quickly and easily downloading an e-book into a common file format for off-line use.²⁹ Since the 2014 survey, tensions have continued between libraries and publishers about pricing, licensing, and purchasing models for e-books. Within licensing agreements, publishers often restrict e-book usage by setting limits on simultaneous use, total use, or duration

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of use. Publishers may also prevent downloads, limit a user's ability to print pages, or restrict use to online only.³⁰ Due to a perceived loss of revenue resulting from e-preferred models, publishers have also explored embargo periods for e-book versions of new titles, with libraries responding in kind with boycotts against those publishers' titles.³¹

Methodology

The current study was based on an online self-selected questionnaire conducted via the survey management platform Qualtrics. The survey consisted of 16 multiple-choice and 8 open-ended questions. Four multiple-choice questions and seven open-ended inquiries were only displayed if specific answers were selected in prior questions; therefore, not all participants were presented with the same survey items.

The survey instrument was adapted from the one used in 2014, which had been modified from the 2012 study, with adjustments based on recent e-book trends and responses from the previous two surveys. In the 2019 survey, the response options "Kindle" and "Nook" to the question "What devices do you use to read e-books?" were aggregated into one choice, "E-reader (i.e., Kindle)." The authors also removed the option "Search for individual books in Research Port" from the query "How do you find e-books that are available from the University Libraries?" because the UMD Libraries discontinued Research Port in 2016. The question "Which of the following e-book collections (available from the University of Maryland Libraries) have you used in the past year?" was revised by dropping 7 of the original 12 options to reflect changing availability and resource names; a new option, "Knovel," was added. As two campuses were included in this survey, new demographic questions were added to identify institution and department affiliation. A copy of the survey is attached in Appendix A and is also accessible via the Open Science Framework.³²

The survey remained open for two months, from October 17 to December 17, 2019, and was advertised extensively across campus. Publicity efforts included e-mail announcements distributed by subject librarians and the UMD Libraries Communications Office; the libraries' social media accounts; and printed flyers posted in campus buildings. The study was also advertised on the libraries' home page. The investigators applied for and received a grant from the UMD Libraries' Research Fund for survey incentives: one \$50 and six \$25 Amazon gift cards and an iPad mini. Prizes were prominently highlighted in the advertising materials and were drawn by random selection from a separate form linked from the survey's end to protect respondents' anonymity.

The survey responses were then exported into a comma-separated values file and analyzed using R version 4.0.3 for descriptive statistics and hypothesis testing. The researchers carried out a variety of tabulations based on the participants' affiliation with the university and college as grouping variables. In line with the 2014 survey analysis that tested opinions and behaviors based on disciplines, this study grouped the academic colleges and schools into "STEM" and "non-STEM" for comparison. Four UMD colleges—the A. James Clark School of Engineering; the College of Agriculture and Natural Resources; the College of Computer, Mathematical, and Natural Sciences; and the School of Public Health—and two UMBC colleges—the College of Engineering and Information Technology and the College of Natural and Mathematical Sciences—were

classified as “STEM.” The remaining colleges and schools were listed as non-STEM. This study assumed that UMD and UMBC respondents had the same demographics and did not compare the two.

The investigators conducted hypothesis tests to evaluate whether different affiliations and disciplines were associated with varying conceptions and behaviors involving e-books. In this survey, entering the physical library, usage of online resources, and academic use of e-books were all ordinal scale data. Therefore, Wilcoxon-Mann Whitney tests were conducted to evaluate whether the distribution of the STEM disciplines’ responses in these variables differed from those of non-STEM fields. Kruskal-Wallis tests were performed to compare the distribution of responses from people with varying affiliations with the university, such as undergraduate, graduate, faculty, staff, alumni, and retired. Pairwise Wilcoxon rank sum tests with Bonferroni adjustment were further conducted for significant Kruskal-Wallis tests to locate specific pairwise significant differences. For nominal variables regarding e-book resources, collections, and formats, chi-square tests were conducted to examine their relation with affiliation and discipline.

Demographics

A total of 2,928 respondents, 2,809 from UMD and 119 from UMBC, completed the 2019 survey, a larger sample size than those of the previous surveys in 2012 and 2014. Relatively more undergraduate students and faculty members responded to the 2019 survey compared to the one in 2014.

Table 2 shows the classification of STEM and non-STEM disciplines, which was based on colleges or schools and excluded participants affiliated with the libraries or who identified themselves as “not affiliated with a College or School.” In 2014, STEM disciplines made up 37.4 percent of the total participants, whereas in 2019 they accounted for more than half.

From a total population of over 40,700 at UMD and more than 14,400 at UMBC, the survey had a response rate of 6.9 percent at UMD and 0.08 percent at UMBC, yielding an overall response rate of 5.1 percent for the two campuses together. By status, faculty had the highest response rate at 11.8 percent, followed by graduate students at 6.5 percent and undergraduate students at 2.7 percent.

There are multiple explanations for the large nonresponse. Nonrespondents likely include those who did not check their e-mail regularly (and thus missed the newsletter and survey invitations) and those who did not review the message boards in campus buildings frequently (and therefore missed the posted flyers). Due to the relative ubiquity of computers, devices, and Internet connections on both university campuses, there should be a minimal, if any, “digital divide” between respondents and nonrespondents. Although it is difficult to calculate the proportion of nonrespondents, the investigators assumed that they did not produce considerable bias because their absence was not associated with e-book perceptions or behavior. Those who were unmotivated by the survey prizes may also have chosen not to respond, although it is hard to predict how this omission would affect the results.

Response bias could be present for nonrespondents who did not check the library website regularly or visit the library building physically because these individuals could



Table 1.
Responses by affiliation with the university

Affiliation	2012	2014	2019
Undergraduate student	701 (52.1%)	679 (31.1%)	1,139 (38.9%)
Graduate student	399 (29.6%)	986 (45.2%)	810 (27.7%)
Faculty	222 (16.5%)	238 (10.9%)	615 (21.0%)
Staff	19 (1.4%)	262 (12.0%)	327 (11.2%)
Research affiliate	0 (0.0%)	18 (0.8%)	0 (0.0%)
Alumnus	3 (0.2%)	0 (0.0%)	20 (0.7%)
Retired	0 (0.0%)	0 (0.0%)	9 (0.3%)
Other	2 (0.1%)	0 (0.0%)	8 (0.3%)
Total	1,346 (100.0%)	2,183 (100.0%)	2,928 (100.0%)

Table 2.
Responses by non-STEM versus STEM disciplines

Discipline	2012	2014	2019
Non-STEM	1,346 (100.0%)	1,087 (49.8%)	1,280 (43.7%)
STEM	0 (0.0%)	816 (37.4%)	1,488 (50.8%)
Not affiliated	0 (0.0%)	280 (12.8%)	160 (5.5%)
Total	1,346 (100.0%)	2,183 (100.0%)	2,928 (100.0%)

be less interested in e-books (or in library collections or resources generally). Even those who viewed the library website or visited the library likely exhibited different preferences for locating online resources, such as general googling. On the other hand, frequent visitors to the library buildings or websites would more likely access the survey and provide positive feedback on the questions related to library visits and e-book perceptions. Those who hold extremely negative views of e-books may also have chosen not to respond, just as those who hold highly favorable perceptions of e-books may have been eager to participate, leading to proportionally more positive responses.



Results

Question 6 asked participants to describe how often they physically enter a campus library. Just over half, 50.2 percent, reported coming to the library on a daily or weekly basis. When cross-tabulated by discipline, 44.8 percent of non-STEM respondents claimed to enter the library on a daily or weekly basis, compared to only 35.3 percent of STEM respondents. Notably, 12.4 percent of STEM respondents declared they never physically enter a campus library. Undergraduate students visited the library significantly more often than any other affiliation, with 61.6 percent coming daily or weekly, compared to just 19.7 percent of faculty. Among staff, 20.8 percent reported never entering the physical library.

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Question 7 asked participants to describe how often they access online library resources, defined expansively to include the library catalog, online databases, e-journals, and e-books. Slightly more than half, 52.2 percent, reported accessing online resources either daily or weekly. When cross-tabulated by discipline, 61.5 percent of non-STEM respondents indicated daily or weekly use, compared to only 44.1 percent of STEM respondents, a statistically significant lower frequency ($W = 740953, p < .01$). Notably, 9.9 percent of STEM respondents reported never using online library resources. Across affiliation status, the vast majority of graduate students (72.9 percent) and faculty (65.9 percent) described accessing resources at least weekly. By comparison, only 36.9 percent of undergraduates specified at least weekly use, representing a significant difference (Kruskal-Wallis = 433.2, $df = 6, p < .01$).

Question 8 asked participants to indicate how often they use e-books for academic purposes on a six-point scale from "Daily" to "Never." The most frequent single response was "At least once a week" (24.8 percent), with a combined 57.9 percent of respondents reporting they used e-books for academic purposes once a month or more. A total of 26.1 percent declared using e-books for academic purposes only once a semester or once a year, and 15.9 percent admitted never using them. The percentages of participants who attested to frequent use of e-books for academic purposes—daily, once a week, or once a month—all increased over the 2014 and 2012 surveys, while the percentages of participants who indicated less frequent use—once a semester, once a year, or never—all declined. The percentage who indicated that they "never" use e-books for academic purposes decreased dramatically for each instance of the survey, from 31.5 percent in 2012, to 21.9 percent in 2014, to 15.9 percent in the most recent poll.

Question 9 asked respondents to indicate if their use of e-books for academic purposes had decreased, stayed the same, or increased compared to three years ago. The majority (62.5 percent) reported that their use has grown, with slightly more non-STEM respondents (65.1 percent) choosing that answer. The percentage of graduate students declaring an increase was the highest of all affiliate groups at 71.6 percent, followed closely by undergraduate students at 67.7 percent. The few alumni and retired participants in the survey more likely reported decreased use, at 25.0 percent and 33.3 percent, respectively.



Question 10 asked participants to describe which, if any, devices they use to read e-books and to select as many options as applied. The most frequent response was computer only (34.9 percent), followed by a combination of mobile phone and computer (17.4 percent), "I don't use e-books" (8.4 percent), and a mixture of tablet, mobile phone, and computer (7.3 percent). To read e-books, 81.9 percent reported using a computer; 38.8 percent utilized mobile phones; 24.7 percent employed a tablet; 19.9 percent read on any brand of dedicated e-reader device; and 9.2 percent selected "I don't use e-books."

Question 11 asked respondents to identify the primary source for the e-books they use, for which they could choose one of the following: University Libraries website, commercial site (for example, Amazon, Barnes & Noble, Google eBookstore), free website (for example, Google Books, HathiTrust, Project Gutenberg), public library website, or other. Those who chose "Never" in question 7—"How often do you use e-books for academic purposes?"—were not asked question 11, resulting in 429 survey participants (14.6 percent) skipping this item. Among the 2,499 responses, "University Libraries website" was the most popular answer, with 37.3 percent of responses, followed by "commercial site" and "free website," at 23.9 percent and 23.8 percent, respectively. "Public library website" received only 11.8 percent of responses.

Question 12 asked respondents to indicate how they find e-books that are available from the University Libraries, for which they could select multiple responses from the following choices: "Search the catalog," "Search within a specific e-book collection (eLibrary, EBSCO eBook Collection, Springer eBooks, Safari, and so on)," "I don't use e-books from the University Libraries," or "Other." This question received a total of 2,819 responses ($n = 2,819$) with "Search the catalog" receiving the majority of single responses (52.7 percent), followed by "I don't use e-books from the University Libraries" (22.8 percent), the combination of "Search the catalog" and "Search within a specific e-book collection" (11.3 percent), then "Search within a specific e-book collection" alone (10.9 percent). No other response or group of responses received a full percentage point of responses.

Question 13 asked respondents to identify specific e-book collections they had used in the past year. Participants could select more than one response from a list that included six named resources, as well as "None of these," "I've used e-books from the University Libraries, but I don't know which collection(s)," and "Other," which allowed the user to enter a text answer. As in the 2012 and 2014 surveys, the most common response was "I've used e-books from the University Libraries, but I don't know which collection(s)" (26.8 percent), followed by "None of these" (23.9 percent). Of the remaining 49.4 percent of responses selecting an e-book platform from the list, EBSCO eBook Collection received the most single-choice responses (7.9 percent).

Question 14 asked respondents how they read e-books. When asked about downloading e-books to read off-line, most (79.0 percent) reported doing so at least sometimes. There was a significant difference between STEM and non-STEM responses ($W = 794750$, $p < .01$), with STEM users more likely than non-STEM to always download books for off-line use. When asked about reading e-books while connected to the Internet, most (86.8 percent) reported that they did so at least sometimes; 4.0 percent said they never read e-books while connected to the Internet. When asked about printing portions of e-books, most respondents (64.2 percent) indicated never or rarely printing portions of e-books. There was a significant difference between STEM and non-STEM respondents

($W = 594564$, $p < .01$), with non-STEM respondents more likely than STEM users to print portions.

For question 23, participants were asked to “check all that apply” from a list of 23 conditions that may make them more likely to use e-books for academic purposes. The most popular choices were:

- If e-books were easier to find and access via the University Libraries’ website (1,288 responses, 43.9 percent).
- If e-books from commercial vendors (for example, Amazon) were less expensive (1,157 responses, 39.5 percent).
- If e-books were easier to highlight and/or annotate (1,129 responses, 38.6 percent).
- If e-books were easier to download to my device(s) (1,102 responses, 37.6 percent).
- If more of my course textbooks were available as e-books (1,069 responses, 36.5 percent).

One hundred seventy responses (5.8 percent) said, “Nothing. I already use e-books extensively or exclusively for academic purposes,” while 227 (7.8 percent) reported, “Nothing. I will always prefer print books to e-books.” Eighty participants chose “Other, please specify” and provided additional details about what would make them more likely to use e-books for academic purposes. See the survey in Appendix A for the full list of possible responses.

Discussion

Frequency of Physically Entering a Library

Since the original 2012 survey, respondents have reported physically entering a campus library less often over time. More than half (53.3 percent) of 2012 respondents indicated they went to a library daily or weekly, whereas only 47.0 percent of 2014 respondents and 40.2 percent of 2019 respondents reported such frequent library visits. Conversely, those who admitted never physically entering a campus library grew from 1.7 percent in 2012 to 8.4 percent in 2019. Frequency of visits does not necessarily correspond to gate counts, however. The annual gate count at the University of Maryland in 2017–2018 was 1,950,022, compared with 1,841,964 in 2014–2015, an increase of 5.9 percent. National statistics for 112 Association of Research Libraries (ARL) institutions showed an increase in gate counts as well, albeit a smaller 2.7 percent.³³

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Frequency of Accessing Online Resources

Non-STEM users report using online library resources more often than STEM users do. While this result may actually reflect that STEM users consult library collections less frequently, it may also indicate that many users do not realize they are using online library resources. Even engineers, reputed to view themselves as non-library users,³⁴ are in fact highly sophisticated consumers of information resources provided by their academic library.³⁵ The frequency of this response may reflect an unexpected challenge created by



academic libraries' pursuit of "frictionless" access to online resources.³⁶ Ease of access, combined with junior researchers' increasing reliance on non-licensed resources, such as Google Scholar,³⁷ may lead some students and researchers to fail to realize that the full-text journal articles they find on Google Scholar are in fact licensed online library resources.³⁸ On the other hand, non-STEM users may more frequently use the library's discovery layer to search for monographs or edited collections; because this method requires using the library website, it may make the library's role in providing these online resources more apparent.

While undergraduate responses were less likely than graduate students or faculty to indicate at least weekly use, the vast majority (87.3 percent) reported using online library resources at least once a semester, while 8.3 percent selected "Never." The percentage of participants declaring daily use (18.4 percent, 20.6 percent, and 17.9 percent in 2012, 2014, and 2019, respectively) or monthly use (25.9 percent, 22.0 percent, and 23.8 percent) changed little across the surveys. The proportion of participants who indicated using online resources never or only once a semester grew across all three surveys (2.7 percent, 8 percent, and 11.2 percent). The growth of these low-use responses over time may reflect, in part, the growth of technologies that permit easier access to online resources. One such technology is IP (Internet Protocol) authentication, which asks for the library's IP address to verify that it is a subscribing institution and then permits users to access the requested database. Another is link resolver software, which provides links to online articles and other appropriate resources. These technologies have been so successful at reducing friction in article fulfillment that the process has become, as described by Lisa Hinchliffe, "so seamless [that] our users often don't realize it is happening."³⁹

Frequency of E-Book Use for Academic Purposes

Findings from the current survey followed prevailing patterns from the 2012 and 2014 polls, with the percentage indicating frequent use of e-books for academic purposes increasing, while the percentage choosing less frequent use decreased. The percentage of respondents who said they "never" use e-books for academic purposes dropped dramatically each time the survey was offered, from 31.5 percent in 2012 to 15.95 percent in 2019. If these patterns hold, this "anti e-book" bias may continue to dwindle, even if it never completely vanishes. Overall, this result likely reflects a growing familiarity with e-books as part of the overall universe of academic resources. There was no statistically significant difference in the responses between STEM and non-STEM ($p = .10$), or between undergraduate and graduate students ($p = .12$), but students reported using e-books for academic purposes more frequently than faculty members and staff did.

E-Book Use Compared to Three Years Ago

As seen in 2012 and 2014, the majority of 2019 participants indicated that their use of e-books had increased over the previous three-year period. Across all three surveys, over 95 percent declared that their use had either risen or stayed the same. The few alumni and retirees who responded to the 2019 survey were the most likely to report decreased use, at 25 percent and 33.3 percent, respectively. Because UMD alumni and many retirees lose access to electronic library resources after departing the university, a reduction in e-book usage is not unexpected from these populations.



Devices Used to Read E-Books

When compared to the 2014 survey results, a higher percentage of 2019 respondents reported that they read e-books by computer (up 9.4 percent) and by mobile phone (up 2.1 percent). A smaller percentage of respondents chose “I don’t use e-books” in 2019 than in 2014 (down 3.1 percent). Notably, an even smaller percentage of respondents preferred a tablet (down 13.2 percent) or a dedicated e-reader device (down 14.9 percent). This drop in dedicated e-reader use is perhaps starker than the percentages convey. In 2014, 527 respondents indicated that they used a Kindle to read e-books, with another 127 reporting that they used a Nook. Meanwhile, only 583 participants in 2019 reported using any brand of dedicated e-reader, despite nearly 750 more completed surveys. Likewise, 106 fewer participants in 2019 indicated that they used a tablet to read e-books.

Taken together, these data suggest that a higher percentage of respondents read e-books in 2019 than in 2014 and would more likely read them on a computer or a mobile phone than respondents in 2014. Use of tablets and dedicated e-readers dropped considerably, however, which could have important considerations for academic libraries weighing the costs and benefits of e-reader or tablet lending programs.⁴⁰ These findings on the diminishing popularity of e-readers align with broader trends, which estimate that the global e-reader market will shrink 12.6 percent annually between 2020 and 2025.⁴¹ The results also contradict earlier studies, which suggested that increasing access to e-readers could enhance e-book usage; rather, the data show that e-book usage has grown despite decreasing reliance on e-readers.⁴² These changes may be due in part to the development of smartphones with larger screens, along with apps that allow access to e-reader libraries (for example, the Kindle app).

These results also may reflect, however, that users often read e-books while performing tasks that require a computer (for example, writing a manuscript or interpreting results). Or the reason may be that dedicated e-readers function so poorly for many platforms licensed by academic libraries that users prefer the desktop or laptop reading experience,⁴³ especially compared with platforms like Overdrive and similar platforms, which seem to work better with dedicated e-readers.⁴⁴

Primary Source for E-Books

The percentage of participants who chose the University Libraries website as their primary source for e-books has increased dramatically with each survey, from 11.4 percent in 2012 to 37.4 percent in the current poll. This growth may reflect a change in behavior, although it may just as likely show a broader awareness of e-book options available via the academic library. Whether this greater familiarity results from increased outreach focused on these resources, from improvements to library discovery systems as discussed earlier, or from other factors is a question unanswered by these responses. A chi-square test of independence shows a significant relationship between the disciplines and primary source for e-books ($= 88.78$, $df = 4$, $p < .01$); non-STEM users

... the data show that e-book usage has grown despite decreasing reliance on e-readers.



were significantly more likely to choose “University Libraries website” for their e-book source, while STEM users were considerably more likely to choose “free website.” This difference reinforces the observation that STEM users tend to start their research with non-licensed resources such as Google Scholar, while non-STEM users often begin with the library home page and its resources.⁴⁴ The percentage of respondents using a public library website or free website changed little from the 2014 survey (for public library, 11.8 percent now versus 8.4 percent in 2014; for free website, 23.9 percent now versus 26.9 percent in 2014), perhaps suggesting that academic researchers do not look to these types of resources outside their usual academic circles.

Asked to specify a source for their e-books, 2.9 percent of respondents chose “Other” and added text. These free-text responses frequently named public library resources (such as Libby or Overdrive) or a particular publisher’s website (for example, Pearson, McGraw Hill, or Cengage.) While several responded with some variation of “look for free versions of the e-book online,” a handful of respondents actually used the word *pirate*, mentioned the names of specific peer-to-peer download services or indexes (for example, The Pirate Bay) or said that they ask colleagues or fellow students to send them full-text files. While the number of such responses is still comparatively small, similar responses did not appear in the 2014 survey, although such services were undoubtedly available at that time.

Finding E-Books from the University Libraries

The responses to question 12 indicate that the library catalog remains the discovery avenue of choice for users who wish to use e-books from their academic library and even grew in importance. More than half,

... the library catalog remains the discovery avenue of choice for users who wish to use e-books from their academic library and even grew in importance.

52.7 percent, chose “Search the catalog” as their only method in 2019, while 45 percent did so in 2014. The second most popular choice, in both 2019 and 2014, was “I don’t use e-books from the University Libraries” (22.8 percent in 2018, 24 percent in 2014). Changes in the UMD Libraries discovery tools resulted in one choice being dropped—“Search for

individual books in Research Port” (UMD’s former electronic portal to databases and e-journals). As in previous surveys, no significant differences appeared between STEM and non-STEM responses for this question.

Use of E-Book Collections from the University Libraries

The continued popularity of “I’ve used e-books from the University Libraries, but I don’t know which collection(s),” chosen by 26.8 percent in the current survey, suggests yet

... the distinctions between the various platforms, publishers, and vendors are lost on most academic library users.

again that the distinctions between the various platforms, publishers, and vendors are lost on most academic library users. Also as in previous surveys, the second most popular response was “None of these” (23.9 percent),

which could indicate either that users do not recognize the names of the platforms available to them through the library, that they use e-books from other sources, such as the public library, or a combination of the two.

Download, Print, or Read Online?

The 2012 and 2014 surveys reported substantive changes regarding participants' likelihood to download e-books for off-line use. While 52 percent of participants in the 2012 study declared "never" downloading e-books for off-line use, only 11.5 percent of respondents in the 2014 survey selected "never." Furthermore, the 2014 survey determined that the vast majority of respondents download e-books at least sometimes. Based on these findings, the analysis of the 2014 survey concluded

that "the ability to quickly and easily download an e-book in a common format (such as PDF) should be a critical feature of any e-book platform considered for purchase." These percentages remained remarkably consistent in the 2019 survey, with only 11.6 percent selecting "never" and 12.3 percent choosing "rarely." These findings suggest that, despite the growing ubiquity of high-speed Wi-Fi and mobile browsing environments, the ability to download items for off-line use remains an important feature for licensed e-books.

By comparison, participants' use of e-books while online and their interest in printing portions of e-books has remained fairly consistent across all three surveys. When asked about printing portions of e-books, most respondents in 2019 (75.2 percent) reported never or rarely printing portions of e-books; these numbers were nearly 75 percent in 2012 and 67 percent in 2014. One caveat to consider regarding the low reported use of on-demand printing is the difficulty of printing within many e-book platforms, as well as the high costs often associated with printing at an academic library. When asked how often they read e-books while connected to the Internet, 8 percent of respondents in the 2012 study chose "never," 26 percent said "sometimes," and 35 percent answered "most of the time." In the 2014 study, these proportions changed to 5.3 percent ("never"), 36.6 percent ("sometimes"), and 32.4 percent ("most of the time"). In 2019, 4 percent chose "never," 30 percent selected "sometimes," and 28.9 percent answered "most of the time."

E-Book Preferences by Type of Resource

The core of this survey and preceding surveys is data on preferred format for particular categories of library resources—scholarly monographs, edited collections, conference proceedings, general and specialized reference works, citation manuals and style guides, and literature. For all categories, survey participants could choose from "I prefer print," "I prefer e-book," "No preference," or "It depends."

Literature

As in previous surveys, literary works, such as novels, short stories, and poetry, are one type of resource where a strong preference for print books remains. In fact, literature is the only category to see an increase in the percentage of respondents preferring print

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compared to earlier surveys, from 40.4 percent in 2014 to 43.8 percent here. There was an accompanying decrease in the percentage of users who preferred e-books for literature, from 29.1 percent in 2014 to 25 percent here. Literature also boasted the lowest percentage (21.5 percent) of “No preference” responses in 2019 and the highest percentage (9.7 percent) of “It depends” answers, reflecting respondents’ strong and complex feelings about this type of source. The literature category also generated the biggest differences between STEM and non-STEM responses ($t = 24.446$, $df = 3$, $p < .01$). Just 40.1 percent of non-STEM participants preferred e-books, compared to 59.9 percent of STEM, although both favored print or chose “It depends” in roughly the same numbers—51.1 percent non-STEM preferred print versus 48.9 percent STEM, and “It depends” 48.6 percent STEM versus 51.4 percent non-STEM. Non-STEM participants were far less likely to choose “No preference” at a rate of 42.3 percent versus 57.7 percent for STEM. This number, in particular, suggests far less ambivalence among non-STEM users about choosing between print and e-books—they may prefer one or the other depending on what they are reading, but they definitely have a preference.

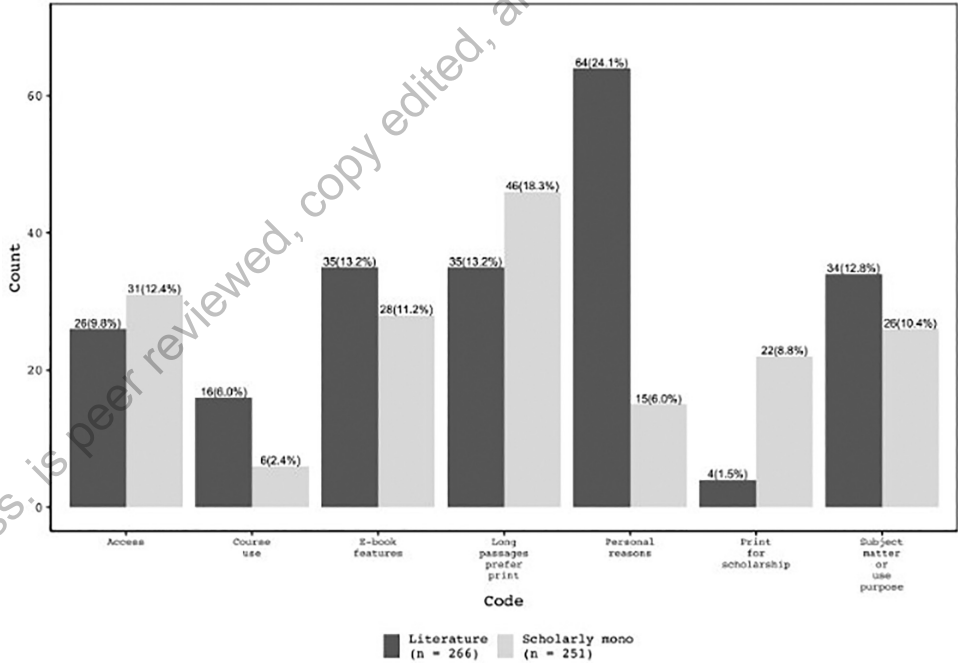


Figure 1. Respondents’ explanations of why they chose “It depends” when asked whether they preferred a print or e-book format for literature, such as novels, short stories, and poetry, and for scholarly monographs.



Scholarly Monographs

As in the previous surveys, the percentage of respondents who expressed a preference for e-book versions of scholarly monographs rose slightly, from 26 percent in 2012, to 30 percent in 2014, to 35.1 percent in 2019. The percentages of respondents who expressed “No preference” or “It depends” stayed the same, around 32 percent and 9 percent, respectively. The rising percentage of users who prefer e-books for scholarly monographs suggests that researchers continue to shed some of the antipathy toward e-books that characterized many responses to the 2012 survey. A chi-square test of independence suggests that the relationship between STEM versus non-STEM disciplines and preferred format for monographs was significant ($= 53.73$, $df = 3$, $p < .01$); non-STEM users preferred print 55.5 percent to 44.5 percent for non-STEM users, while there was a strong preference for e-books among STEM (58.5 percent to 41.5 percent). Non-STEM also chose “No preference” more frequently (59 percent versus 41 percent for non-STEM). On the other hand, non-STEM selected “It depends” at a much higher rate than their STEM colleagues did, 58.8 percent versus 41.2 percent, suggesting more ambivalence among arts, humanities, and social sciences scholars to reading scholarly monographs in an e-book format.

Edited Collections

The number of participants with a clear preference for edited collections in e-book form jumped significantly over the three surveys, from 32 percent in 2012, to 33.6 percent in 2014, to 40.6 percent in 2019. There was an accompanying decline in the percentage expressing a preference for print—from 33 percent in 2012, to 24.3 percent in 2014, to 19.3 percent in 2019. Those with “no preference” stayed roughly the same as in 2014 (31.8 percent this time, compared to 33.1 percent in 2014). The continuing increase in respondents with a clear preference for edited collections in e-book format suggests that more users accept the benefits of collections in that format, specifically the ability to navigate to a specific chapter and download or print it for their research. Similar to scholarly monographs, there were notable differences between STEM and non-STEM users. STEM readers expressed a stronger preference for e-books (57.2 percent versus 42.8 percent non-STEM) or no preference (58.8 percent versus 41.2 percent), while non-STEM readers more strongly favored print (55.8 percent versus 44.2 percent for STEM) or chose “It depends” (60.0 percent versus 40.0 percent for non-STEM).

The continuing increase in respondents with a clear preference for edited collections in e-book format suggests that more users accept the benefits of collections in that format, specifically the ability to navigate to a specific chapter and download or print it for their research.

Conference Proceedings

The gap between users who prefer e-books over print for conference proceedings also continued to grow. In 2014, 45 percent chose e-books, while 14 percent selected print,



Conference proceedings are one of two types of resources, along with citation manuals and style guides, for which a majority of respondents preferred e-books.

and 34 percent had no preference. In 2019, nearly 52 percent favored e-books and just under 10 percent chose print, while 33 percent had no preference. Conference proceedings are one of two types of resources, along with citation manuals and style guides, for which a majority of respondents preferred e-books. As with edited collections, conference proceedings in e-book form offer users the ability to skip to a particular chapter or article and download or print it for research use, and the proceedings are rarely (if ever) read or consulted in their entirety. Surprisingly, there were still differ-

ences between STEM and non-STEM. Both chose “I prefer print” or “No preference” in similar numbers (49.6 percent non-STEM versus 50.4 percent STEM; 48.5 percent versus 51.5 percent), but non-STEM answered “It depends” in higher numbers (54.0 percent versus 64.0 percent STEM) and “I prefer e-books” in smaller numbers (43.3 percent versus 56.7 percent STEM).

General and Specialized Reference

Respondents continue to have an overwhelming preference for general reference works (dictionaries, general encyclopedias, directories, and the like) in e-book format. The percentage who prefer e-books rose from 46.2 percent in 2014 to 49 percent, while the percentage who favor print fell from 18.7 percent to 14.2 percent. The percentage of users with no preference stayed roughly the same, 29.3 percent compared to 28 percent in 2014. Likewise, the results for specialized reference indicated preferences for e-books increasing and inclinations for print decreasing. In 2019, 46.8 percent preferred e-books compared to 42.5 percent in 2014, while 14.75 percent chose print in 2019, versus 20.3 percent who did so in 2014. “No preference” responses were similar, 30 percent in 2019 and 28.6 percent in 2014. The way that reference resources are used, often to check a specific fact, definition, or summary of a key concept, makes them well suited for e-book format, which allows keyword searching and easy skipping around within the work. The differences between “general” and “specialized” reference works may have been lost on most participants, making the trends for both similar. STEM and non-STEM respondents differed in their preferences for reference works; STEM participants chose “I prefer e-books” for general reference at a higher rate (54.9 percent versus 45.1 percent for non-STEM) as well as for specialized reference (55.6 percent versus 44.4 percent for non-STEM). STEM also continued to have higher rates of “No preference” responses (general reference 54.7 percent versus 45.3 percent non-STEM; specialized reference 55.1 percent STEM versus 44.9 percent non-STEM).

Citation Manuals and Style Guides

This category garnered the largest percentage who preferred e-books (58.3 percent). Those choosing e-books for citation manuals and style guides continued to grow—it was 50.7 percent in 2012 and 57 percent in 2014—while those favoring print continued to

drop dramatically, from 21 percent in 2012 and 16.1 percent in 2014 to only 10.2 percent in 2019. Another 26.3 percent stated “No preference” for these works, and the smallest percentage of all the categories, 5.21 percent, chose “It depends.” As noted in 2014, users have changed to e-book versions of these resources, so libraries (if they have not already done so) should switch to purchasing these primarily in electronic form, particularly if multiple users can access them at once. Responses regarding this category were generally consistent between STEM and non-STEM, but STEM respondents chose “No preference” at a much higher rate, 58.8 percent versus 41.2 percent for non-STEM.

It Depends . . .

The questions about each type of resource also offered a choice of “It depends,” followed by an opportunity to enter free text to explain that response. Less than 10 percent of participants—between 5.2 percent (citation manuals and style guides) and 9.7 percent (literature)—chose “It depends.” Of those, between 57 percent and 77 percent provided additional information by entering a free-text answer. These responses were analyzed and coded using the terms identified in Appendix B. The researchers began with the codes used for the 2014 analysis, adjusted some definitions, and created new codes to accommodate the different responses this time. The most commonly applied codes were “Access,” “E-book features,” “Long passages prefer print,” “Personal reasons,” and “Subject matter or purpose.” These free-text responses provided useful context for understanding respondents’ choices.

The open-ended comments captured by the 2019 survey demonstrated more nuanced and sophisticated thoughts about e-books, indicating a greater familiarity with them than the open-response answers in the 2014 survey. Multiple participants specifically mentioned “license agreements” or “DRM” (digital rights management), demonstrating an awareness that the accessibility of a title may depend on the publisher’s contract with the library. Many others referred to access issues, both good and bad. On the plus side, respondents liked that they could access e-books from anywhere, instead of going to the library and trying to secure a physical copy. On the negative side, several indicated that technical limitations of e-book platforms restricted access and made print books a more practical choice. As opposed to previous surveys, in which participants frequently expressed antipathy

toward e-books, responses this time were more nuanced and practical, such as stating a preference for e-books for one particular use or subject area while favoring print for others. One respondent wrote, “I prefer paper but ease of access is more important.”

By contrast, there were still nostalgic responses such as, “Students should become acquainted with the book as a medium of joy that has tactile qualities as well.” A surprising number of responses mentioned such practices as printing out individual chapters or pages from an e-book, so that the preference for print or e-book depended on the ease of these activities. The definition of the “Easy to copy” code was updated from the last survey to account for such responses.

. . . respondents liked that they could access e-books from anywhere, instead of going to the library and trying to secure a physical copy.



Multiple respondents mentioned that their choice of e-book or print depends on the nature of their use—not just the length of the content they need to read, but whether they want to find specific words or subjects, or whether they plan to refer to the text multiple times (as in use for a course or for a book they would consider adding to their personal library). Many 2019 participants also indicated that their decision would depend on the subject matter, but it was often unclear whether this choice related to a decision between ownership and access for books in their field versus those outside their discipline, or whether the answer related to a recognition that print books are better for certain subjects (for example, art and other disciplines that rely on high-resolution illustrations). A code was added (“Subject matter or purpose of use”) to capture such responses this time around, as purpose of use and subject matter were frequently mixed together.

Multiple respondents indicated that, while they prefer print books for their own scholarship or in general, they recognize the advantages of e-books and use them for other purposes, such as for leisure reading. For example, “I find I’m reading more e-books for leisure because they are so portable and they don’t take up a lot of space in my home bookcase. I’ve found I’m only buying hard copies for books I treasure or REALLY need.”

A new phenomenon this time is the survey participants who preferred one format or the other for use in a course; for example, e-books, which could be accessed by multiple users for course readings, or print books, which teachers could bring into the classroom to show to students. One response specifically mentioned preferring a shared e-book “to save students money.” A new code was added—“Course use”—to reflect these responses.

Another change to the codes from previous surveys involved “Frequency of use,” which was adjusted to also include “Length of use.” With greater experience with e-books comes greater understanding that e-book loan periods vary and are often insufficient for extended scholarly use. Related responses singled out the quality of the e-book as a determining factor; this was coded as “E-book features,” along with such characteristics as highlighting, annotation, searching, and portability. This answer indicates a growing familiarity with the e-book format and a recognition that certain vendors’ products are more usable than others.

Finally, a code was added for “Accessibility” to capture responses that specifically mentioned such factors as eyestrain and text size as influencing a decision whether to access something in print or electronic form. It is important for librarians to realize that e-books provide greater accessibility to those who use screen readers to access content, although as mentioned in the literature review, many products that provide only a PDF have a way to go to become truly accessible.

How Can E-Books Be Improved?

As in 2014, the 2019 survey provided respondents with a list of reasons that would make them more likely to use e-books. In 2012, this was a free-text question, and therefore percentages were much lower and cannot be directly compared. Response rank is included to facilitate comparison across years.

The top two responses in 2012 were chosen much less frequently in both 2014 and 2019. The percentage who indicated they would use e-books more often if they had a dedicated e-reader dropped by 8 percent from 2014 to 2019, another indication that e-readers are no longer a deciding factor for potential e-book users.



Table 3.
Respondents' answers to the question "What, if anything, would make you more likely to use e-books for academic purposes?"

Response	Rank in 2012*	Percentage of respondents and rank in 2014	Percentage of respondents in 2019
If e-books were easier to find and access through the UMD [University of Maryland] Libraries website	3	48.0% (1)	44%
If e-books from commercial vendors were less expensive	4	43.2% (3)	39.5%
If e-books were easier to highlight or annotate	6	44.0% (2)	38.6%
If e-books were easier to download to my device(s)	8	38.5% (4)	37.6%
If more of my course textbooks were available as e-books	12	37.2% (6)	36.5%
If there were more e-books available in my areas of research interest	1	37.3% (5)	32.4%
If I owned a dedicated e-reader	2	35.6% (7)	27.5%

*In 2012, this was a free-text question, and therefore percentages were much lower and cannot be directly compared.



As reported earlier, the “Other, please specify” responses were reviewed and coded. The most frequently expressed sentiment (15.8 percent) was that the respondent did not like e-books and would always prefer print, followed closely by the increased availability of e-books (13.2 percent) and improved access and technology for finding and using e-books (both at 10.5 percent). A new concern surfaced in the 2019 comments, the availability of e-books via interlibrary loan (ILL). The ability to share e-books via ILL varies widely among publishers but will remain a concern as libraries purchase larger percentages of their collections in electronic format and as more books are published only as e-books and not in print. Many comments expressed frustration with using e-books from the UMD or UMBC libraries, as in the following: “If e-books listed [in] the catalog were actually available when they say they are.”

Additional Comments about E-Books

Free-text responses that provided additional comments or suggestions were reviewed and coded using the terms identified in Appendix B. When given this open-ended opportunity to provide feedback about e-books at the University of Maryland Libraries, participants continued to show their growing understanding of e-books. For example, 14.5 percent cited “Technology improvements” as a barrier to use, with some users specifically mentioning digital rights management (DRM). Even if respondents did not bring up digital rights management or licenses, they discussed ongoing frustration with the restrictions that stem from those arrangements, such as wanting to access an e-book for as long as they desired in the format they wanted (for example, a PDF). These issues, combined with the hurdles of accessing publisher e-book platforms, led to 15.1 percent citing “Ease of access/use” as a barrier to using e-books. One response read, “Accessing e-books through the library is a nightmare. Most have hard access limits on the number of times you can access the book, or how much of it you can get online. Many will only let you download or print a few chapters.” These user experience issues and the access restrictions on publisher’s platforms, along with users’ preferences (for example, wanting to reduce screen time), contributed to 13.4 percent of respondents submitting a response that was coded as “Don’t like e-books/Prefer print.”

There was also a desire for a greater availability of e-books (12.6 percent), especially for textbooks or other required course readings (11.2 percent). Survey participants often

Users often see the library as the source of their difficulties and frustrations with the e-book format.

cited affordability, convenience, and access as reasons for desiring electronic course materials. Even those who did not prefer e-books for their own research mentioned that they would like course texts to be available as e-books. Although many issues with access and availability originate with the publishers or e-book platform vendors, and thus are out of libraries’ direct control, the library

nevertheless becomes the face of such problems for users. Users often see the library as the source of their difficulties and frustrations with the e-book format.

Implications for Collection Managers

For a brief overview of the implications of this study for collection managers, see Table 4.



Table 4.
Implications for collection managers of the 2019 survey on e-book use

Category	Finding	Implication
Which collections?	A slight majority of respondents in 2019 indicated that they either do not know which collection they typically access or they do not use any of the major e-book collections. As in the 2012 and 2014 surveys, users may not find the distinction between different collections to be meaningful.	Facilitate access to e-books from discovery layers and other search interfaces rather than attempting to purchase titles in a particular e-book collection.
Which devices?	Among the respondents who read e-books, an overwhelming majority (81.9%) indicated they use a computer for reading. Both tablet and e-reader usage decreased by more than 10% since the 2014 survey, indicating that users no longer seem to find e-readers necessary to read e-books, or, perhaps, academic e-books do not lend themselves to usage via e-reader.	Rather than dedicating resources to acquire e-readers or tablets for users, focus on increasing user awareness and findability of library e-books that can be accessed via their own personal devices. Consider letting e-reader and tablet borrowing programs expire.
Scholarly monographs	Users still prefer print books for scholarly monographs, although their preference for print declined and the percentage of respondents who say they have “no preference” rose. STEM respondents preferred e-books more than did non-STEM respondents, who also chose “It depends” at a higher rate, indicating more ambivalence to e-books.	Buy print versions of scholarly monographs, although users in STEM fields may be more amenable to e-books. Users are becoming more flexible, and acceptance of scholarly monographs as e-books will likely grow.



Table 4. Continued.

Category	Finding	Implication
Edited collections	While respondents still expressed a slight preference for edited collections in print, 40.6% indicated they prefer e-books for this type of resource, up from 32% in 2012 and 33.6% in 2014. As with scholarly monographs, STEM respondents preferred e-books more than non-STEM respondents.	Consider buying e-book versions of edited collections, especially in STEM fields. As with scholarly monographs, users are becoming more flexible, especially for this type of resource, in which users typically navigate to a particular chapter.
Conference proceedings, general and specialized reference works, citation manuals, and style guides	Overall, respondents had a strong preference for e-books over print for all these resources, which are typically used when seeking out an article or piece of information rather than for reading at length.	Buy electronic versions, preferably that can be accessed by multiple users, of conference proceedings, general and specialized reference works, citation manuals, and style guides.
Literature	Literature continues to be the genre for which researchers profess the strongest preference for print books—in fact, this was the only category that showed an increase in print book preference since 2014.	Buy literature, such as novels, short stories, and poetry, in print.
What would make patrons more likely to use e-books?	Downloading e-books for off-line use remains an important feature; most users still do not print out e-books; and opinions are mixed on whether they read e-books while connected to the Internet.	Purchase e-books that allow download for off-line use. The ability to print is a less critical feature.



Move over content: discovery is key	Searching the library catalog continues to be the preferred way of finding e-books from the academic library, and users often have little grasp of the differences between various vendors, collections, and databases. Users still express frustration with finding and using e-books via the catalog.	Privilege e-book suppliers who provide materials that can be integrated into existing integrated library systems, either directly through record uploads or indirectly through proxies or APIs (application program interfaces), and do not require separate searches or access protocols. Work to improve discoverability and ease of e-book use via the library catalog.
Interlibrary loan	Users have become more aware of e-book limitations when it comes to interlibrary loan (ILL). Many expressed frustration with finding an e-book in the discovery layer, only to realize that the university had not purchased the e-book version, nor could it be requested via ILL.	Advocate for the ability to share e-books via ILL with publishers and aggregators and ensure that discovery interfaces indicate how to access e-books featured therein.
Digital rights management (DRM) or licensing	Users expressed frustration with restrictions brought about by digital rights management or licensing issues.	Purchase e-books without onerous DRM restrictions or licensing terms, and advocate for more publishers and aggregators to provide these types of e-books.
Other recommendations	The survey results showed an increase in respondents who report never using online library resources, despite all indicators to the contrary. While seamless access to electronic content improves the overall user experience, users may not realize that access is provided by their university library.	Ensure databases and other online interfaces are clearly branded, and continue outreach efforts to demonstrate to users that the materials they consult online are in fact provided by the library.



Suggestions for Further Research

Since these survey data were collected in 2019, the underlying fundamentals of academic library users' experiences and familiarity with online library resources have likely changed dramatically due to the COVID-19 pandemic. The pandemic, which began to impact the United States in earnest in March 2020, upended many of the traditional service offerings of academic libraries seemingly overnight.⁴⁵ In particular, physical book lending and the use of library spaces such as reading rooms were suspended across the country for several months.

These restrictions on access to the physical infrastructure and print collections of academic libraries had a profound effect on libraries and their user communities. For many

For many libraries, the pandemic accelerated their investment in digital collections and digital services.

libraries, the pandemic accelerated their investment in digital collections and digital services.⁴⁶ Many libraries began purchasing electronic duplicates of items held in print, placing further stress on already strained collections budgets.⁴⁷ While measures like these were seen as emergency responses, library directors surveyed on how COVID-19 impacted their decision-making predicted that the pandemic will push even more of their budgets toward online

resources, including e-books, while they expect a related decrease in spending on print resources.⁴⁸

For users, the restrictions on access to physical collections meant that researchers of all affiliate statuses and from all academic disciplines found themselves relying on online resources almost exclusively for at least several months. While predictions on how the pandemic will affect academic libraries broadly have been manifest,⁴⁹ additional studies may wish to examine whether and how users' increased exposure to e-books as a result of COVID-19 service disruptions may have affected their preferences about the format. The technology acceptance model framework suggests that such exposure might convince reticent users of e-books' suitability for intensive research reading.⁵⁰ On the other hand, users who found themselves forced to work within restrictive user experience environments such as HathiTrust Emergency Temporary Access Service, or who discovered limitations on their ability to check out or renew physical books that were included in this service, may have developed new aversions to e-books.⁵¹

While large-scale surveys such as this provide one means of assessing users' preferences, the impact of the COVID-19 pandemic underscores the need for librarians charged with managing collections to engage their stakeholders in conversations about how this experience may have changed users' research practices.⁵² Possible questions to consider are whether restrictions on in-person classes may have led instructors to assign more e-books for their course readings, or whether limitations on use of campus facilities may have prompted scholars to consult e-books for the first time while away from campus. Based on findings from nearly a decade of e-book surveys, the e-book platforms used and the academic background of the user will add additional layers of nuance to these discussions. A junior researcher in the humanities parsing through single pages of a digitized book in the Emergency Temporary Access Service may have different opinions

about e-books than an engineering instructor assigning course readings from Knovel or AccessEngineering. Information science researchers or library practitioners interested in engaging members of their communities in discussion around these topics may find the Ithaka S+R research practices studies to be a useful framework for exploring these issues across a wide spectrum of disciplines.⁵³ Ithaka's use of semi-structured interviews may be more fruitful for these types of probing questions than a structured interview or the survey protocol used in this study.

Conclusion

The e-books landscape and academics' perceptions of it have continued to evolve since this survey series debuted in 2012. The 2014 follow-up and the present study document these changes, reflecting how opinions and use of e-books have developed. In particular, the current study finds declining use of dedicated e-readers and limited interest in the ability to print sections from e-books. As in previous studies, STEM and non-STEM disciplines have different preferences for various types of resources. While both slightly favor print for scholarly monographs and edited collections, a larger margin of non-STEM users indicated such a preference. STEM and non-STEM users alike desire e-books for conference proceedings, general and specialized reference works, citation manuals, and style guides. Users from all disciplines continue to prefer to read literature in print. The current study also shows more nuanced understandings and general awareness among users regarding the limitations of e-books, including digital rights management, licensing, and interlibrary loan. These users expect that publishers and libraries will work together to resolve or mitigate these restrictions going forward. Finally, as identified in previous surveys, the streamlining of authentication systems for library resources means that users can more easily access the items they need, but they are less aware of whether those resources are supplied by their library or freely available online. Academic libraries should continue to privilege materials that can be made discoverable through existing library systems but should also use branding and outreach to ensure that users recognize the important role the library plays in delivering content.

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Appendix A

E-Book Perception and Use Survey 2019

Note: What is an e-book? For the purposes of this survey, an e-book is a book-length publication in digital form. E-books can be read on dedicated e-book readers (for example, Kindle), personal computers, tablets, and mobile phones. Note that electronic journals, newspapers, and full-text archives (for example, Early English Books Online) are not considered e-books for the purposes of this survey.

Q1 What is your status at the University?

Undergraduate student (1)

Graduate student (2)

Faculty (3)

Staff (4)

Other (Please specify your status below.) (5) _____

Q2 Which broad discipline do you identify with?

Please specify your discipline: _____

Display This Question:

If Which broad discipline do you identify with? = Other, please specify on next page.

Q3 Which institution are you affiliated with?

University of Maryland College Park (1)

University of Maryland Baltimore County (2)

Display This Question:

If Which institution are you affiliated with? = University of Maryland College Park

Q4 If you are affiliated with a College or the University Libraries, please select it from the list below.

- College of Agriculture and Natural Resources (1)
- School of Architecture, Planning, and Preservation (2)
- College of Arts and Humanities (3)
- College of Behavioral and Social Sciences (4)
- Robert H. Smith School of Business (5)
- College of Computer, Mathematical, and Natural Sciences (6)
- College of Education (7)
- James Clark School of Engineering (8)
- Philip Merrill College of Journalism (9)
- College of Information Studies (10)
- School of Public Health (11)
- School of Public Policy (12)
- University Libraries (13)
- I am not affiliated with a College. (Please specify your unit below.) (14) _____

Display This Question:

If Which institution are you affiliated with? = University of Maryland College Park

Q5 If you are affiliated with a Department, please select it from the list below.

Display This Question:

If Which institution are you affiliated with? = University of Maryland Baltimore County

UMBC Informed Consent for Participation in Research Activities

Thank you for agreeing to participate in our survey.

Before we start, we'd like for you to read the informed consent information below. Informed consent refers to the voluntary choice of an individual to participate in research based on an accurate and complete understanding of its purposes, procedures, risks, benefits, and alternatives. The survey will be completely anonymous and voluntary. We do not ask or identify any individuals who plan to participate in this survey. If you have any questions before completing this survey, please contact the investigator, Timothy Hackman at thackman@umbc.edu.

Informed consent:

You must be 18 years of age or older to participate in this survey.

The purpose of this study is to gather data about participants' use of and preferences for electronic books (e-books) in their academic discipline(s). You are being asked to volunteer because of your role as a student, staff, or faculty member at UMBC. You will be asked to complete an online survey with 24 questions, a mix of multiple choice and open-ended questions. The survey may take about 15–20 minutes to complete. I have been informed that my participation in this research study is voluntary and that I am free to withdraw or discontinue participation at any time. I have been informed that data collected for this study will be retained by the investigator and analyzed even if I choose to withdraw from the research. If I do choose to withdraw, the investigator may use my information up to the time I decide to withdraw.

There are no known risks involved in completing the survey. There are no tangible benefits for completing the survey, but your answers to this survey may contribute to the development of library print and e-book collections to best meet the evolving needs of students and researchers.

All data obtained will be anonymous. There is no way for us to find out who you are, and your data will not be shared with any other parties under any circumstance. The principal investigator, Timothy Hackman, has offered to and has answered any and all questions regarding my participation in this research study. If I have any further questions, I can contact Timothy Hackman at thackman@umbc.edu. This study has been reviewed and approved by the UMBC Institutional Review Board (IRB). A representative of that Board, from the Office of Research Protections and Compliance, is available to discuss the review process or my rights as a research participant. Contact information of the Office is (410) 455-2737 or compliance@umbc.edu.



After reading the consent items, please proceed to the questionnaire on the next page. Click ">>" to get started with the survey. If you'd like to leave the survey at any time, just close the web page. I have been informed that I may print out a copy of the consent document for me to keep.

UMBC Protocol Number Y20TH25041

Display This Question:

If Which institution are you affiliated with? = University of Maryland Baltimore County

Q4 If you are affiliated with a College, School, or the Albin O. Kuhn Library & Gallery, please select it from the list below.

- College of Arts, Humanities and Social Sciences (1)
- College of Engineering and Information Technology (2)
- College of Natural and Mathematical Sciences (3)
- Erickson School of Aging Studies (11)
- Graduate School (12)
- School of Public Policy (13)
- School of Social Work (14)
- Albin O. Kuhn Library & Gallery (15)
- I am not affiliated with a College or School (please specify your unit below) (16)

Display This Question:

If Which institution are you affiliated with? = University of Maryland Baltimore County

Q5 If you are affiliated with a Department or Research Center, please select it from the list below.

Q6 How often do you physically enter a campus library?

- Daily (1)
- At least once a week (2)
- At least once a month (3)
- At least once a semester (4)
- At least once a year (5)
- Never (6)

Q7 How often do you access online library resources (databases, e-journals, e-books, catalog)?

- Daily (1)
- At least once a week (2)
- At least once a month (3)
- At least once a semester (4)
- At least once a year (5)
- Never (6)



Q8 How often do you use e-books for academic purposes?

- Daily (1)
- At least once a week (2)
- At least once a month (3)
- At least once a semester (4)
- At least once a year (5)
- Never (6)

Q9 Please complete the following statement: compared to three years ago, my use of e-books for academic purposes has _____.

- Increased (1)
- Stayed the same (2)
- Decreased (3)

Q10 What devices do you use to read e-books? (Check all that apply)

- E-reader (i.e., Kindle) (1)
- Tablet (4)
- Mobile phone (5)
- Computer (6)
- I don't use e-books (7)

Skip To: Note If What devices do you use to read e-books? (Check all that apply) = I don't use e-books

Q11 What is your PRIMARY source for the e-books you use?

- Commercial site (ex: Amazon, Barnes & Noble, Google eBookstore) (1)
- Free website (ex: Google Books, HathiTrust, Project Gutenberg) (2)
- Public library website (3)
- University Libraries website (4)
- Other, please specify (5) _____

Q12 How do you find e-books that are available from the University Libraries? (Check all that apply)

- Search the catalog (1)
- Search within a specific e-book collection (ebrary, EBSCO eBook Collection, Springer eBooks, Safari Tech Books Online, etc.) (2)
- I don't use e-books from the University Libraries (4)
- Other, please specify (5) _____



Q13 Which of the following e-book collections have you used in the past year? (Check all that apply)

- ebrary (3)
- EBSCO eBook Collection (4)
- Gale Virtual Reference Library (5)
- IEEE/Wiley eBooks (7)
- Knovel (16)
- Springer eBooks (11)
- None of these (13)
- I've used e-books from the University Libraries, but I don't know which collection(s) (14)
- Other, please specify (15) _____

Q14 When using e-books, how often do you:

	Never (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)
Download to a device for off-line use (1)					
Read online (via a website, while connected to the Internet) (2)					
Print all or a portion of the book? (3)					

Q15 Please indicate in what format you would prefer that the University Libraries purchase the following types of resources:

	I prefer print (1)	No preference (2)	I prefer e-books (3)	It depends (4)
Scholarly monographs (1)				
Edited collections (2)				
Conference proceedings (3)				
General reference (4)				
Specialized reference (5)				
Citation manuals and style guides (6)				
Literature (novels, short stories, poetry, etc.) (7)				

Note: In question 15, the types of resources are defined as follows:

Scholarly monograph: Book-length, detailed study of a single subject, usually by a single author.

Edited collection: Book on a single theme with one or more editors and chapters/ essays on different subjects by different authors.

Conference proceedings: Collection of papers from an academic conference.

General reference: Examples: *Oxford English Dictionary*, *Encyclopædia Britannica*, *World Almanac*, *Bartlett's Quotations*, etc.

Specialized reference: Examples: subject encyclopedias (e.g., *Oxford Encyclopedia of Economic History*), research guides (e.g., *Literary Research Guide*), handbooks and manuals (e.g., *Merck Manuals*), etc.

Citation manuals and style guides: Examples: *Chicago Manual of Style*, *MLA Handbook*, *APA Publication Manual*, etc.

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Scholarly monographs [It depends]

Q16 Please explain why you chose "It depends" for "Scholarly monographs" in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Edited collections [It depends]

Q17 Please explain why you chose "It depends" for "Edited collections" in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Conference proceedings [It depends]

Q18 Please explain why you chose "It depends" for "Conference proceedings" in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = General reference [It depends]

Q19 Please explain why you chose "It depends" for "General reference" in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Specialized reference [It depends]

Q20 Please explain why you chose "It depends" for "Specialized reference" in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Citation manuals and style guides [It depends]



Q21 Please explain why you chose “It depends” for “Citation manuals and style guides” in Question 15:

Display This Question:

If Please indicate in what format you would prefer that the University Libraries purchase the follow... = Literature (novels, short stories, poetry, etc.) [It depends]

Q22 Please explain why you chose “It depends” for “Literature (novels, short stories, poetry, etc.)” in Question 15:

Q23 What, if anything, would make you more likely to use e-books for academic purposes? (Check all that apply.)

- If I owned a dedicated e-reader (for example, Kindle). (1)
- If I owned another device (for example, tablet or mobile phone) that could be used to read e-books. (2)
- If e-books were easier to download to my device(s). (3)
- If e-books were easier to find and access through the University Libraries’ website. (4)
- If I had more training or knowledge on how to find, access, download, or use e-books. (5)
- If e-books from commercial vendors (for example, Amazon) were less expensive. (6)
- If there were more e-books available in my area(s) of research interest. (7)
- If there were more e-books available in the non-English language(s) I read and/or study. (8)
- If more of my course textbooks were available as e-books. (9)
- If e-books were easier to print. (10)
- If e-books were easier to highlight and /or annotate. (11)
- If I knew more about how to cite information found in e-books / If the citation format(s) I use had better guidance for citing e-books. (12)
- If e-books were compatible with my assistive or adaptive technology. (13)
- If e-books were technologically improved (for example, better screen resolution, less reflective reading surface, longer battery life, etc.). (14)
- If more e-books were available without digital rights management (DRM) restrictions. (15)
- Nothing. I already use e-books extensively or exclusively for academic purposes. (16)
- Nothing. I will always prefer print books to e-books. (17)
- Other, please specify: (18) _____

Q24 Please share any additional comments or suggestions on e-books at the University Libraries.



Appendix B

Coding for Open-Ended Questions

When possible, codes below are identical to those used for data analysis in 2014, with the following exceptions:

* Indicates a code with an updated definition for the 2019 survey.

† Indicates a new code for the 2019 survey.

Questions 16–22: Please explain why you chose “It depends” in Question 15:

***Access:** Respondent prefers whichever format is easiest to access, for example, print if the user is already in the library, but e-book if the user is online. Or respondent prefers e-books so long as access constraints (e.g., length of loans) are not prohibitive.

†Accessibility: Respondent indicated that print or e-book format was more accessible to them as a user with a disability. For example, respondents who mentioned the size and legibility of text, or the ability to use an e-book with a screen reader.

***Both:** Respondent would prefer to have both formats available, or does not have a preference for one format or the other. For example: “If a source works for my paper, I’ll use it.”

***Citation:** Respondent prefers print or e-book based on perceived ease of citing the material, or because the e-book works with a particular citation management system.

Cost: Respondent prefers whichever format is cheaper.

†Course use: Respondent indicated that their preferred format depends on whether they intend to use it for a course, either as a student (e.g., as a textbook) or instructor (e.g., to show the physical item to students or put it on course reserve, or to provide access to an e-book for multiple students to use).

***Easy to copy:** Respondent prefers whichever format is easier to copy, such as downloading or printing specific chapters or pages, or photocopying from print material.

***E-book features:** Respondent prefers e-book features, such as full-text search, convenience, portability, and the like. This category also includes responses which mentioned frequency of updates to e-book versions compared to print. If a response specifically mentioned “Ease of access” as a benefit of e-books it was coded as “Access;” if it mentioned “Ease of use” as a benefit of e-books, it was coded as “E-book features.”



E-book for scholarship: Respondent prefers to use e-books for scholarly reading or, vice versa, would rather use print books for leisure reading.

†Frequency or length of use: Respondent indicated that the length of time they would be using the book would influence their choice of print versus e-book. Some respondents prefer a print book if they believe it will require in-depth reading and/or they will use it frequently. Related, others indicated recognition that e-book loans are typically much shorter than those for print books.

***Illustrations:** Respondent prefers print or e-book based on the presence or absence of illustrations, data visualizations, tables with quantitative data, and the like.

***Lack of familiarity:** Respondent was unable to make a determination due to lack of familiarity with the type of resource or the e-book format.

Length (in general): Respondent indicated that the length of the material would influence which format was chosen but did not indicate which format was preferred for any given length.

***Long passage prefer e-book:** Respondent indicated they would prefer an e-book when reading lengthy passages or a full book but would rather have a print book when reviewing short passages or for looking up specific facts or sections.

***Long passage prefer print book:** Respondent indicated they would prefer a print book when reading lengthy passages or a full book but would rather have an e-book for reviewing short passages or for looking up specific facts or sections.

***Mark-up:** Respondent indicated they would prefer print to be able to physically mark up the text (underline, highlight, add marginal notes, and so on) or that they find it easier to take notes from a print book. Responses that indicated use of highlight, annotate, and similar features of e-books were coded as "E-book features."

***Navigation:** Respondent indicated that it was more difficult to "flip through" an e-book to the notes or other sections, and therefore preferred print. Also includes respondents who indicated that the formatting of a print book was important (previously coded as "Formatting" in 2014 survey, for respondents who indicated that e-books were preferred if the print formatting was preserved and the e-book was error-free.)

Ownership: Respondent prefers to purchase and own print copies of some books but prefers e-books for titles they do not intend to keep; or, vice versa, respondent prefers to purchase and own e-books for titles they intend to keep but borrow print copies for books they do not intend to keep. Also includes respondents who indicated storage space concerns for print books.

***Personal reasons:** The respondent cited a personal reason, such as mood or feeling at the time, general reading experience, engagement with the text, or other intangible things

for their selection of print versus e-book. This code is also used to capture responses that seem idiosyncratic, such as a claim that there is more “privacy” when reading e-books because “there’s no book cover to let people know what you’re reading.”

Print for scholarship: Respondent prefers to use print works for scholarly reading or, vice versa, prefers e-books for leisure reading.

†Subject matter or purpose of use: Respondent indicated that their preference for print or e-books depends on the subject matter of the material or on their intended use for it.

†No response: Response was not detailed or specific enough to be interpreted with reference to the question

Question 24: Please share any additional comments or suggestions on e-books at the University of Maryland Libraries.

Acceptance: Respondent prefers print but recognizes that e-books will likely become more prevalent in the future and therefore is willing to adapt.

Already use e-books: Respondent is already using e-books for leisure reading, research, or both. For example, “I love my ebook readers and I take them everywhere”; “I use them avidly for leisure reading.”

Both: Respondent indicated that they would prefer to have books available in both electronic and print formats (for example, “Print is easier to read, but e-books are easier to search so I would like to have both options”).

Citation: Respondent reported lack of page numbers, or standards for citing e-books, as a reason for not using them more. For example, “Consistency in page number[s]”; “If citation and page markings in e-books corresponded to their printed versions.”

Convenience: Respondent indicated “Convenience” (without any further explanation) or mentioned portability of e-books, ability to access them without going to a library, or 24/7 accessibility.

Depends on text: Respondent indicated a willingness to use e-books for certain purposes or with certain kinds of texts. For example, “I prefer e-books for shorter passages and print for larger ones”; “I prefer only to use them for reference”; “Books that I am unlikely to read more than once, but are not being used for research purposes.”

Don’t like e-books/Prefer print: Respondent indicated a general preference for print books or a dislike of e-books, or indicated that they would only use e-books if there were no print equivalent available. (For example, “KEEP HARD COPIES. NO EBOOKS!!!!!!!!!!!!” or “I like holding a physical book, newsletter, article, etc. in my hands and turning the pages.”)



E-book reader: Respondent would more likely use or read e-books if they owned an e-book reader (Kindle, Nook, or the like). Some answers mentioned iPads in obvious reference to the survey prize, for example, "If I won an iPad!"

Ease of access/use: Respondent indicated that e-book use would increase if electronic books were more user-friendly or declared that e-books are currently difficult to find, access, or use. For example, "If they were easy to find and access through the library website," "If I could request them from Interlibrary Loan," "An incredibly friendly way to use them, more advanced than what is out now." Note: Also includes respondents who answered "Accessibility," though this response could also refer to greater availability (having larger numbers of e-books available).

Environment: Respondent indicated a preference for e-books over print books because e-books do not use paper and are therefore more "sustainable."

Features (printing/highlighting/annotation/searching): Respondent would more likely use e-books for specific features or if specific features were available. Most frequently mentioned were the ability to easily print, to highlight text, to annotate or write in margins, and to search for specific words or phrases. Note that three of these features—highlighting, annotation, and searching—are available in existing e-book formats, while printing remains prohibited or problematic for most e-books.

General positive response: Respondent expressed a favorable opinion of the library, library services, or the survey itself.

Greater availability: Respondent indicated a wish for a greater number or wider selection of available e-books; for example, "More choices." Also includes participants who indicated a desire for specific formats (such as "magazines," "research articles that are peer-reviewed," "audiobooks") or subjects ("literary theory," "linguistics," "biographies," "recreational reading," and the like).

Languages: Respondent indicated a wish for greater availability of e-books in foreign languages generally, or in specific languages (such as Spanish).

Lower cost or free: Respondent indicated that use of e-books would increase if they were free or cheaper than the print equivalent. Note that many responses seem to conflate e-books with e-book readers and it is not always possible to tell whether the individual means "if e-books were cheaper" or "if readers were cheaper." Other participants did not seem aware that the library lends e-books and e-book readers free of charge; for example, "E-books would be more feasible if there were not as many fees involved with using them, or if the readers were more affordable."

No response: No response or unusable response, for example, "Yes"; "If they made me fly."

Nothing/not sure: Respondent indicated “Nothing” or “Not sure” with no explanation.

Plan to use them more: Respondent indicated that they are currently not using e-books but has no objection to using them or will use them more in the future.

Publicity/training/didn't know about e-books: Respondent indicated lack of awareness regarding library holdings of e-books, need for the UMD Libraries to do more publicity about e-book collections, or a willingness to use e-books if they had more knowledge of how to use them; for example, “Clear information about how to use. More publicity would help . . . I never even knew these were available.”

Technology improvements: Respondent mentioned specific improvements to e-book formats or readers that would make their use more likely—for example, clearer screens for less eyestrain, higher quality, open formats with no restrictions on what the user can do because of digital rights management (DRM).

Textbooks: Respondent would be more likely to use e-books if more textbooks were available in e-format. Also includes participants who indicated that professors do not allow e-readers, laptops, and similar devices in the classroom, thereby inhibiting use of e-books for course texts.

Work with my device/app: Respondent would be more likely to use e-books if they were in a more compatible format (for example, PDF) or one that worked with a specific device (such as Kindle, Nook, iPad, or iPhone). Respondent may also have mentioned a particular app (usually from a public library, such as Overdrive or Libby) that they prefer for using e-books.

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