

How much of library digital content is checked out but never used?

Library digital
content

A call for refined lending models

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Abstract

Purpose – This paper aims to identify patterns, trends and potential implications related to post-checkout non-usage (material that is checked out by a user, but subsequently never opened and/or downloaded) of library digital content.

Design/methodology/approach – A large urban Canadian public library's data (2013-2017) from Rakuten OverDrive was analyzed. Pending items (items that are checked out, but neither opened nor downloaded) were compared with total checkouts to determine post-checkout non-usage rates.

Findings – Checkouts and overall rates of post-checkout non-usage of e-books and e-audiobooks have risen significantly and consistently. Juvenile and non-fiction e-books demonstrate higher post-checkout non-usage rates than adult and fiction e-books, respectively. The library spends up to US\$10,700 per year on metered access e-books that are never opened by users. This number has grown significantly over the years.

Originality/value – E-materials in libraries have been growing rapidly, but their current lending models are still largely a direct application of concepts in traditional library services that have developed based on physical materials, such as checkouts, due dates, renewals, holds and wait times. However, e-materials do not have the limitation of physical materials that prevents other users from accessing a checked-out item, which makes many of the traditional concepts no longer applicable. New concepts and lending models should be developed that allow users to access any library e-materials at any time, and are financially functional and sustainable for both libraries and e-content providers.

Keywords Library management, Public libraries, E-books, Collection development, Circulation analysis, Digital content in libraries, Library finances, Library uses, Post-checkout usage

Paper type Research paper

Introduction

As the proliferation and accessibility of technology and Web-based applications continue to rise, more and more libraries are adding digital items to their collections (Ashcroft, 2011; De Castell, 2014; Harvergal and Price, 2011). As of 2016, more than 90 per cent of public libraries offer e-books to library users (Arch, 2016). In the past decade, public libraries in Canada have doubled their expenditure on digital content (De Castell, 2014), including e-books and e-audiobooks. E-materials hold several advantages over their physical counterparts, as they are more portable, less prone to loss and damage and do not require users to physically visit the library (Ashcroft, 2011). On the other hand, e-materials also present some challenges to libraries and to users as they are often more expensive, are restricted by digital rights management, have varying acquisition and distribution models depending on vendors and



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publishers and require technology and digital literacy skills to access (Acedo and Leverkus, 2014; Arch, 2016; Polanka, 2012).

Although many studies have investigated user perceptions and attitudes of e-books and e-audiobooks, studies about usability and user behavior around e-materials are relatively limited (Zhang *et al.*, 2017). The introduction of e-materials provides an opportunity to analyze objective usage data and investigate the phenomenon of post-checkout non-usage (material that is checked out by a user, but subsequently never opened and/or downloaded). Such studies are difficult, if not impossible, for physical library materials as there is no way to gather objective data on post-checkout usage. However, findings from studies in a digital context may be transferable and provide insight into similar user behaviors with physical library materials.

The present study seeks to identify patterns, trends and potential implications of post-checkout non-usage of e-materials at public libraries by analyzing a large urban Canadian public library's checkout data of e-books and e-audiobooks. The understanding of patterns in post-checkout non-usage may bear implications for libraries in terms of finances, collection development and user services. Results from this study may shed light on ways for libraries and digital content vendors to improve the efficiency of digital content lending, and may also inform collection management and user-targeted marketing and solutions.

Background and related studies

A phenomenon termed *tsundoku* exists where individuals purchase books, but never read them. *Tsundoku* is the act of "leaving a book unread after buying it, typically piled up together with other unread books" (Sanders, 2014). This phenomenon extends to the digital reading environment. Major e-book provider Kobo determined that 60 per cent of the e-books purchased through their company are never opened (Kozłowski, 2015; Rhomberg, 2015). It was also noted that the Kobo customers were more likely to open e-books if they cost more (Kozłowski, 2015). A study by Jellybooks that analyzed free advanced reading copies of e-books used in Apple's iBooks app determined that 45-50 per cent of the e-books were never opened (Kozłowski, 2015; Rhomberg, 2015).

Although there is not much in the extant literature that explores this phenomenon in a library context, it is logical to assume that not all borrowers of library books and audiobooks may get around to reading or listening to them, particularly because of the lack of financial commitment to items loaned from the library. However, *tsundoku* in the context of library material does have adverse implications for libraries and their users. For example, library users who check out items and never use them prevent others from accessing them and prolong wait times if there are holds on them. This is also true in the digital environment, where users check out or download e-books and e-audiobooks, but never actually read or listen to them. When this occurs with e-book or e-audiobook vendors that charge libraries using a pay-per-checkout model, libraries get billed for checkouts that are never used.

Individuals may exhibit *tsundoku* for a variety of reasons. For many people, material items, including books, are a way to represent themselves; what others perceive their reading habits to be (even if they are not actually reading them) may determine how they fit into social and intellectual spaces. For others, there may not be enough time to read or listen to all the material they have purchased or checked out. More simply, people are often indecisive and change their minds constantly. When it comes to library e-materials, the usability of platforms and knowledge of lending processes may also be factors in post-checkout non-usage. People may not know that they are supposed to "return" e-books or how to actually use checked-out materials. As there are no financial obligations associated

with using e-material that is borrowed from libraries, people may not feel hurried to open or return materials before their due dates.

E-book and e-audiobook acquisition and distribution

Libraries can purchase e-books for their collection, much like print books. In most cases, however, libraries pay for subscriptions or access to e-books that are hosted through third-party vendor websites or apps (Harvergal and Price, 2011). Different suppliers and publishers of e-books and e-audiobooks vary in their formats, titles, loan periods, licensing terms, user interfaces, downloadability and cost (Arch, 2016; Polanka, 2012). As financial restrictions often play a major factor in library decisions around services and collections, library systems must carefully evaluate available e-book and e-audiobook vendors to determine the most sustainable platforms that meet the needs of their users and stakeholders (Acedo and Leverkus, 2014; Polanka, 2012). Although nearly all e-book and e-audiobook vendors allow content to be streamed or used in a Web browser, most users download (if possible) borrowed content so that they can be used offline (Polanka, 2012). Most commonly, e-books are downloaded as portable document files or EPUB files, while e-audiobooks are often downloaded as MP3 files (Polanka, 2012). Digital content vendors and aggregators, which provide content from multiple publishers, differ in how library users are able to access e-books and e-audiobooks from their libraries (Brooks, 2013; Polanka, 2012).

Unlimited simultaneous access. Models that allow e-books and e-audiobooks to circulate without restrictions on the number of the users are the most user-friendly, and often the most expensive (Acedo and Leverkus, 2014). An unlimited number of authorized users may access these materials simultaneously, with no need to place holds on items (De Castell, 2014). In some cases, this manifests in the form of a “pay-per-use” model, where e-book and e-audiobook vendors, such as Hoopla, charge libraries based on the number of user checkouts. In addition to potential start-up fees and subsequent access fees, libraries are charged a fee for each user checkout, ranging from US\$0.50 to above US\$4.99 per item depending on its type and currency (De Castell, 2014; Polanka, 2012). In this model, libraries are adversely affected financially when library users check items out but do not use them.

One copy/one user access. Some e-book and e-audiobook vendors, such as OverDrive, provide libraries with content using a circulation model similar to that of physical items (De Castell, 2014; Polanka, 2012). In other words, there are a set number of “copies” provided to the library and only one user may check out each “copy” at any given time (De Castell, 2014). Thus, popular titles often have several holds and long wait times. This is a common lending model for e-audiobooks in OverDrive, but varies depending on publishers. In these models, libraries may pay annual hosting or maintenance fees in addition to subscription or purchasing fees (Polanka, 2012). Although post-checkout non-usage would not affect libraries financially in one copy/one user models, library users are adversely affected if they must wait an extended period of time for an item that is checked out but not being used, thereby decreasing the efficiency of library service. Long hold queues may also prompt libraries to purchase additional copies to meet demand and mitigate user wait times.

Metered access. Another common e-book lending model is metered access, where libraries pay for an item for a pre-determined number of checkouts, amount of time or the earlier of the two. Some publishers only provide access to content on metered access models. For example, many e-books in OverDrive can be accessed for 26 total checkouts or 12 months, whichever occurs sooner. After all checkouts are used or if the pre-determined time has passed, the item is automatically removed from the library’s active holdings and must be re-purchased if continued access for library users is desired. Checkouts that are never

opened still count toward a metered access item's total checkout count, reducing the number of checkouts remaining for other users.

Usage statistics

Usage statistics are critical factors in a library's decision-making when it comes to digital content (Conyers *et al.*, 2017). They play a role in collection management, budget decisions and the evaluation of a library's ability to meet user needs (Lowe *et al.*, 2013). Due to the wide variety of vendors and aggregators that provide e-books and e-audiobooks to libraries, the usage data that is collected and provided to libraries is inconsistent; this makes evaluating usage of digital library content difficult (Conyers *et al.*, 2017; Lowe *et al.*, 2013). Studies have highlighted the lack of consistency and clarity in e-book usage data and the need for greater standardization in this area (Conyers *et al.*, 2017).

One standard that exists is Counting Online Usage of Networked Electronic Resources (COUNTER). Released in 2002, COUNTER sets standards for the recording and dissemination of usage statistics of digital content, such as e-books and e-audiobooks (Lowe *et al.*, 2013). However, inconsistencies still exist between COUNTER-compliant vendors as the definitions of standard terms may be interpreted and stored differently causing data comparison across vendors to be unreliable (Conyers *et al.*, 2017; Lowe *et al.*, 2013). Some statistics collected with COUNTER standards, namely, costs, searches, checkouts and turnaways (i.e. unsuccessful checkouts); however, COUNTER statistics do not provide information about the actual usage of a digital item (Lowe *et al.*, 2013). For COUNTER data to be more meaningful to libraries, the scope of collected data must be expanded (Conyers *et al.*, 2017; Lowe *et al.*, 2013). Examples of data that are not currently collected as part of COUNTER that would be beneficial include "number of titles used, usage by collection, usage by format, usage by subject, percentage of the collection used, data for use/non-use and cost per use" (Conyers *et al.*, 2017, p. 25).

A statistic that is not gathered in COUNTER-compliant reports is post-checkout (non-) usage. Some vendors, such as OverDrive, track post-checkout usage by identifying whether or not a user selected a usage or download format after checking items out. Other vendors, such as eBook Library and ebrary, are able to track individual user "sessions" (i.e. the number of pages or chapters viewed, copied or printed) and how much time was spent using it, while some vendors do not track post-checkout usage at all (Levine-Clark, 2015). Even with specific usage data, however, it cannot be truly determined if and how an e-book or e-audiobook was used (Levine-Clark, 2015). For example, the viewing of a page of an e-book does not indicate that the page was actually read (Levine-Clark, 2015). Comparing content usage with contextual factors, such as location and subject, as well as content availability, can be useful for libraries in managing and evaluating collections and costs (Levine-Clark, 2015).

The retrieval of specific usage data must often be requested from vendors by libraries (Conyers *et al.*, 2017). Therefore, the statistical information regarding e-book and e-audiobook usage that is available to libraries depend on the tracking and releasing of this information by the vendors and suppliers themselves.

Methodology

A large urban Canadian public library's data (2013-2017) from Rakuten OverDrive, a major provider of e-books, e-audiobooks and e-videos, was downloaded in the format of a large spreadsheet for each year of data. In these spreadsheets, each row details one checkout. There are a total of approximately four-million rows of data. Relevant data columns for this study include the usage status of items, file formats, lending models, subject/audience and

library price. Pending items (items that are checked out but never opened or downloaded) were compared with total checkout information to determine post-checkout non-usage rates. The intended audience (adult/juvenile), subject (fiction/non-fiction) and average library costs of pending items were also compared and analyzed. As OverDrive is a major provider of e-books and e-audiobooks at the library studied, but plays a far less significant role as an e-video provider, e-video is not considered in this study.

In the library studied, lending models used in OverDrive include one copy/one user and metered access (limited by time and/or number of checkouts). In determining the adverse effects on library costs, the average cost of an item under a metered access by checkout lending model was used to calculate the average cost per circulation. This number was multiplied by the number of unopened checkouts of the associated lending model to approximate the library's loss in dollars. E-audiobooks in OverDrive predominantly exist in one copy/one user models at the library studied, and were, therefore, not considered in the cost analysis. As averages were used in the calculations in this study, and only metered access by checkout e-books were considered, the approximate financial loss due to post-checkout non-usage is likely underestimated. Further studies must be conducted to more accurately capture this information.

Results

Unsurprisingly, the number of checkouts of e-books has increased significantly and consistently – from 353,937 in 2013 to 866,433 in 2017 at an average rate of about 25 per cent per year (Figure 1). The number of checkouts of e-audiobooks has also increased, dramatically in most recent years – with a 43 per cent increase from 2015 to 2016 and a 35 per cent increase from 2016 to 2017. There were a total of over 1.1 million checkouts of e-books and e-audiobooks in 2017 alone.

The overall rates of post-checkout non-usage for e-audiobooks remained relatively steady from 2013 to 2016; however, a significant increase is demonstrated between 2016 and 2017 with the post-checkout non-usage rate reaching 16 per cent. In contrast, post-checkout non-usage rates of e-books have shown a general increase since 2013 – reaching 11 per cent in 2017 (Figure 2). The post-checkout non-usage rates of e-books were relatively similar across lending models in 2017, totaling 11 per cent for one copy/one user e-books and 12 per cent for metered access e-books. Non-usage rates of juvenile e-books were more than double that of adult e-books from 2013 to 2017 – this holds true for both fiction and non-fiction material (Figure 3). Non-fiction e-books demonstrated higher post-checkout non-usage rates than fiction e-books – this is true of both adult and juvenile material. This pattern, however, was not consistently found in e-audiobooks.

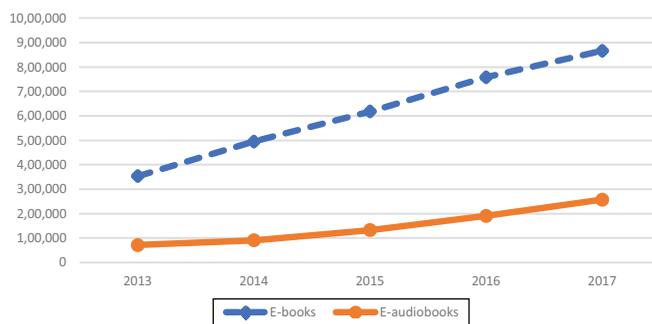


Figure 1.
Total checkouts by year

EL
37,2

260

Figure 2.
Yearly post-checkout non-usage rates (%)

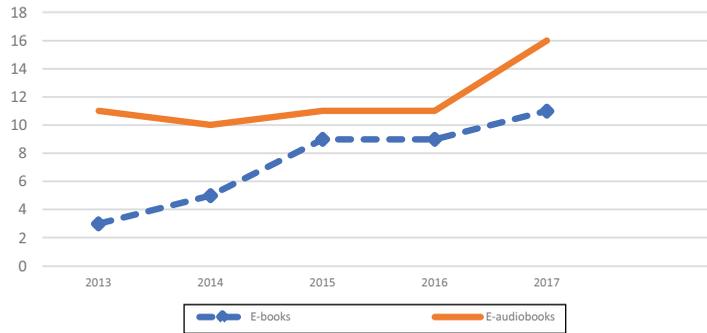


Figure 3.
Average post-checkout non-usage rates (%) based on subject/audience

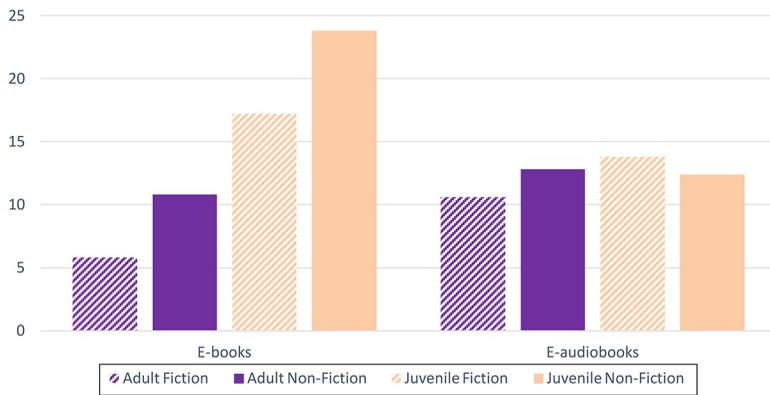
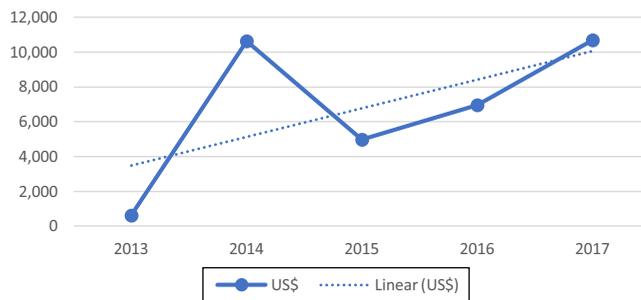


Figure 4 shows that the library in which the data were collected spent up to US\$10,700 per year on metered access e-books that were never opened by users – approximately 83 per cent of which was attributed to adult e-books in 2017. This number has grown significantly since 2013 – including a spike in 2014 – with the significant growth of library expenditures on e-books each year. This analysis was based solely on e-books that used a

Figure 4.
Approximate average loss (US\$) from non-usage



Note: Based on metered access e-books with 26 and 52 checkouts

metered access lending model of 26 or 52 checkouts, and was intended to demonstrate the financial implications of post-checkout non-usage to libraries. This study did not quantify the cost of post-checkout non-usage of e-materials loaned under one copy/one user (which accounted for 62 per cent of unopened e-books in 2017) or metered access by time models (which accounted for 14 per cent of unopened e-books in 2017).

Discussion and conclusion

Among the more than 1.1 million checkouts of e-books and e-audiobooks in 2017, 11 per cent of e-book checkouts and 16 per cent of e-audiobook checkouts were never opened, causing a waste of more than US\$10,000 on metered access e-books alone. These cost implications would be even higher when the post-checkout non-usage of e-books and e-audiobooks of other lending models are considered as 62 per cent of unopened e-books and 95 per cent of unopened e-audiobooks in 2017 were attributed to one copy/one user lending models. More refined lending models and improved usage reporting standards should, indeed, be explored to reduce waste and enhance user experience.

E-materials in libraries have been growing rapidly, but their current lending models – whether it is pay-per-use or one copy/one user access – are still largely a direct application of concepts in traditional library services that have developed based on physical materials, such as checkouts, due dates, renewals, holds and wait times. However, e-materials do not have the limitation of physical materials that prevents other users from accessing an item once it is checked out by one user and support simultaneous access by multiple users, which makes many of the concepts in traditional library services mentioned above no longer applicable. New concepts and lending models should be developed by publishers and vendors that address post-checkout non-usage, allow users to access library e-materials simultaneously, and are financially functional and sustainable for both libraries and e-content providers. Page-based access models, such as those used by Total Boox (www.totalboox.com/faq-direct-readers) point to a promising direction forward where all users have access at any time to any e-books subscribed to by the library and the library only pays for the number of pages actually accessed by its users. For example, if a user reads 20 pages of an e-book that is 200 pages long, the library would only pay 10 per cent of the cost of that checkout. Such models, compared to current whole-item and checkout-based models, could not only reduce cost or waste from non-usage but also improve user experience by effectively eliminating wait times and due dates.

Libraries have long been advocates for fair access to e-materials and must continue to advocate for sustainable and reasonable lending and pricing models. However, fundamentally different models, such as page-based access, can take time to negotiate and implement. In the meantime, there are low-hanging fruits that could immediately help reduce waste and enhance user experience. For example, lending limits could be changed from checkout-based to access-based – count a “use” only when a checked-out item is opened and allow other users to access a checked-out item that is not being used. This would significantly mitigate the costs associated with post-checkout non-usage, particularly in pay-per-checkout and metered access lending models. In addition, libraries could implement automatically generated messages that are sent to users who have checked out digital items but have neither opened nor downloaded them for use after a specified period of time. This message would prompt users to either use or return their checked-out items, particularly if the items have holds or are likely to be unopened (e.g. non-fiction e-books or juvenile e-books). This would likely lead to an increase in early returns of unused items and decrease wait time for library users.

Future studies that explore user implications of post-checkout non-usage (e.g. wait times) and factors that might cause post-checkout non-usage would be beneficial and interesting, particularly in an ever-growing digital environment. Studies that include the analysis of more lending models and more specific analysis of different e-book and e-audiobook subjects and categories, would also provide a more accurate approximation of the waste of post-checkout non-usage. Additionally, studies that examine user demographics as they relate to post-checkout non-usage would provide insights into further applications for mitigating the concerns identified in this study and enhancing user experience.

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