

Evidence-Based Acquisition at Hacettepe University Libraries

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To determine the most suitable acquisition model, or to decide whether or not the model they have already chosen is functioning efficiently and economically, librarians must carry out relevant evaluations of their current or potential acquisition models. In this study, an evaluation of the Cambridge evidence-based acquisition (EBA), was carried out at Hacettepe University Libraries between December 16, 2019, and December 31, 2020. Within the scope of the EBA, the number of e-books opened for access was 35,624, the number of unique books used was 2,462 and the number of the books purchased at the end of the model was 168. In total, the books were used 36,934 times. Ninety-three percent of the books were never used during the EBA model implementation term. While 52 percent of the books opened for access consisted of “books for research,” 47 percent of the number of unique books used consisted of “coursebooks.” Usage cost per unit was calculated as 0.82 USD, and the average book cost was calculated at 180 USD. Purchasing the books based on their list price was a reason for the high average book cost; nevertheless, one should consider that the entire collection of books was open for access for a year-long period of evaluation. In addition, one should not forget that further usage of e-books from the entire collection would decrease the unit cost of the books in the final purchase. During the implementation term, we observed that the Cambridge EBA Model was a suitable option for Hacettepe University Libraries.

With the development of information and communication technologies e-books have become significant components of academic library collections. However, although they would like their e-book collections to be sustainable, academic libraries have limited purchasing power due to their fixed or decreasing budgets and the increase in publication prices.¹

Academic librarians are required to evaluate e-book acquisition models, which are constantly changing because of the effects of economic conditions and technological developments, to efficiently manage their budget. The complexity of the acquisition models submitted by the publishers and providers, as well as the diversity and magnitude of library types, prevent the possibility for a single universal model to offer the most suitable choices for all libraries or to be adopted by all publishers.²

Publishers, consortia, librarians, and aggregators continue to develop new and innovative solutions in terms of acquisition models. Librarians must evaluate e-book acquisition models meticulously to increase the effectiveness of library

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services, meet user needs at the highest level, and manage budgets effectively and economically. There are different e-book acquisition models, such as purchasing (perpetual access), subscription (access only), renting (pay per use or view), approval plan acquisition, demand-driven acquisition (DDA), and evidence-based acquisition (EBA).³

While individual titles or e-book collections are added to library collections perpetually, using a purchasing model, the subscription model offers limited-time access to a collection.⁴ A renting model enables limited-time access to individual titles.⁵ Using an approval plan acquisition model, electronic and hard-copy sources are acquired automatically based on established criteria.⁶ Using patron-driven acquisition (PDA) and demand-driven acquisition (DDA) models, e-books are purchased by libraries after reaching a certain usage threshold.⁷ Using an EBA model, an e-book collection determined by the publishing house is opened for access for a specified period of time. At the end of this time, selected titles from the collection are added to the collection of the library perpetually, following the payment of a predetermined fee.

Literature Review

In recent years, in response to challenging budget environments, academic libraries, or in some cases, consortia have begun to experiment with the EBA model offered by various publishers on diverse subjects. There are studies which evaluate the application of this model in libraries, such as a comparison of the EBA models of different publishers, a comparison of EBA models and general e-book collections, and evaluations of EBA final title selection. While the results of the studies reveal the advantageous and successful aspects of the model for libraries and consortia, they also draw attention to some challenges.

Stony Brook University (SBU) Libraries evaluated Springer Nature's EBA model and general STEM e-book collection usage.⁸ SBU Libraries implemented the EBA model for engineering and science disciplines from November 2019 to October 2020, and the collection included 3,186 titles published from 2016 to 2018. Of the 3,186 titles, 11.33 percent were used within a twelve-month period. Of the 4,406 STEM titles, 89.20 percent were used from January 2019 to December 2019. This SBU Libraries study revealed that usage of the EBA collection increased in some periods. This increase was explained in the study by the initial publicity devoted to the EBA collection, the change to online education because of COVID-19, and the beginning of a new semester. The increase or decrease of usage in certain periods is not unique to this model. In the study, the authors drew attention to an issue related to final EBA title selection, and stated that not only usage data, but also the type

of material should be taken into consideration for selection. In the SBU Libraries, during the final EBA title selection, usage data and the type of material used determined the selection. This SBU study revealed that electronic textbooks can be added to collections, especially during the change to online education during a pandemic period.

The University of Arizona Library used the ProQuest EBA model.⁹ Purchases made during the first year of the model implementation, constituted a small part of the total value of the accessible collection. With the data acquired from the collections using the ProQuest EBA model, the authors concluded that some collections were used much more than others, while other collections were used barely, or not at all. The librarians acquired significant experience in implementation processes, creating workflows between different units for easier access. It defined newly added sources to the system, presenting them to users in a timely manner. Some of the primary collection sources were available only outside of the EBA plan. Studies show that other libraries also experienced similar challenges in terms of accessing the collection, adding new titles to the system, and publicizing the model in a timely manner.¹⁰ During the EBA model implementation process, the University of Arizona Library overcame difficulties important for other library administrators to consider in their own search for the best possible acquisition model for their library.

Oklahoma University Libraries evaluated different e-book acquisition models.¹¹ Usage data from the library was compared with Elsevier's evidence-based selection model (EBS) to determine how closely the approval plan choices and the librarian choices matched user preferences. The authors concluded that librarian choices more closely matched user preferences than the approval plan choices, and results obtained from usage data might be effective in a library's purchasing decisions. Elsevier's EBS model enabled access to a wider book collection under the same budget parameters and proved to be an economical way to increase the number of books instantly accessible to users in the short term. However, libraries should consider not having the flexibility to choose titles during the EBA access period, the necessity for an initial basic financial investment, and accepting the probability of not achieving the expected usage numbers due to access to a single collection under the EBA agreement terms. One may observe from this study that revisions should be allowed to EBA agreement clauses, especially for long-term contracts.

In response to rising costs, limited budgets, and the variety of publisher e-book offerings, the University of British Columbia Library, like other university libraries, invested in EBA programs from Cambridge, Wiley, Taylor & Francis, and CRC Press.¹² The authors found that knowing how much to spend per publisher at the beginning of the program, and being able to control costs,

were advantages of the EBA model. But challenges also presented regarding discovery and access, evaluation and decision-making, and librarian workloads. The EBA model is relatively new, and many librarians are managing this model for the first time. For this reason, they are experiencing heavier workloads.

In a study conducted at the Hong Kong University of Science and Technology (HKUST) Library, a DDA, and Wiley's Online Library (WOL) EBA model were evaluated. The authors found that the use of the WOL EBA model, which offered the best solution in terms of ease of use, discoverability, and relevance, was higher than the DDA model, and that e-journal use increased by approximately 50 percent. Even though it was difficult to prove a causal relationship between them, the researchers believe that the EBA model increased the general study efficiency of WOL, and despite being more expensive for the library, the EBA program was renewed.¹³

There are other studies evaluating the successful implementation of an EBA model. The University of South Florida (USF) Library uses multiple DDA and EBA e-book models to provide the monographic materials they need in the most cost-effective manner. USF Libraries found EBA programs to be successful in terms of the amount of content accessed and administrative expenditures.¹⁴ In a study conducted at Brigham Young University (BYU) measuring the effect of different e-book acquisition models on library expenditures, users were provided with unlimited access to titles using an EBA model. The BYU authors concluded that other libraries would also do well to evaluate newly emerging e-book acquisition models.¹⁵

Hacettepe University Libraries studied the effects of acquisition model choices on total costs, model choices relative to different disciplines, models which offered the most suitable total, and unit usage costs. E-book acquisition models were tested based on real usage data, and a subject and cost analysis was made using different acquisition scenarios. The authors concluded that EBA models were among the most suitable models available, and would, when selected, decrease expenditures.¹⁶

The EBA model studies cited above have generally applied to e-books. At the University of Colorado (CU) Libraries, EBA was used for streaming videos from Alexander Street.¹⁷ EBA is recommended for libraries that have room in their budgets for perpetual access to streaming videos, for libraries that need patron input, or for institutions that have broad program offerings. But there are risks and limitations to consider as well. If there is more than one library participating in the system, or if the EBA model is applied by a consortium, making title selection based only on usage statistics will be risky. For example, one of the most surprising findings in the EBA program at the CU Libraries was that no single video was viewed by all three

libraries. Especially at the consortial level, patron needs may be too diverse for streaming videos.

Orbis Cascade Alliance Consortium, which consists of thirty-nine academic libraries, evaluated Wiley's EBA collection. A consistent history of the use of Wiley titles by consortium members, stable costs, and the vast number of accessible titles were the decisive reasons for choosing the EBA model. In addition, the authors found that the libraries used the model efficiently, and that constant access to the most frequently used titles was ensured.¹⁸

An EBA model has proved unsuccessful in some library settings. Librarians at Case Western Reserve University conducted a study of Elsevier, CRC, and EBSCO EBA models for engineering disciplines, focused on efficient budget management and increased content access. After evaluations based on usage, the CRC EBA model was deemed unsuccessful, and canceled.¹⁹

This literature review reveals that academic libraries and consortia, in their search of e-book acquisition solutions, have had similar experiences using EBA models. Usage statistics, material type, unit price, and library budget considerations were the main factors used in reaching decisions regarding a model's overall feasibility and viability. While the EBA model met the criteria for being successful and useful by some librarians, some other librarians experienced difficulties, and discontinued use of the model. The amplitude of the accessed collection, the controlled use of the budget, the selection of resources with guaranteed use, and the control of title selections were considered advantageous. The disadvantages were that some collections offered are never used, publisher restrictions, and workload increases for librarians. The workload increases for librarians result from the necessity of providing access to titles added throughout the process, informing users, cost and usage evaluation, and decision making.

Methodology

Hacettepe University offers programs in medicine and health sciences, science and engineering, and social sciences and humanities at the graduate and undergraduate levels. Cambridge University Press EBA collections gave Hacettepe University programs the opportunity to access many valuable and relevant interdisciplinary resources for users. The distribution of the books in the Cambridge University Press EBA collections ($n = 35,624$), according to categories specified by Cambridge University Press, were *Books for Research* (52 percent), *Cambridge Library Collection* (19 percent), *Coursebooks* (27 percent), *Legacy Textbooks* (3 percent), and *Silverberg's Principles* (one book). Looking at the subject distribution of the e-books, 80 percent of them belonged to the *Social Sciences and Humanities* category,

14 percent belonged to the *Science and Engineering Category*, and 6 percent belonged to the *Medicine and Life Sciences* category. The Cambridge EBA model was implemented at Hacettepe University Libraries from December 16, 2019, to December 31, 2020, when EBA collections ($n = 35,624$) were opened for access by Hacettepe University users. Collections were accessible from the publisher platform without digital rights management (DRM) and with unlimited users. This model was implemented for the first time by the library. The library was not allowed to choose which collections they could include in the EBA Collection.

Our evaluation of the Cambridge EBA model was conducted to determine whether it would be a viable acquisition model for the creation of collections that could meet the needs of users efficiently and economically. The EBA Model implementation process was a new experience for the Hacettepe University Libraries, and was also a relatively new acquisition model in Turkey. We believe that our study of the experience of Hacettepe University Libraries in its efforts to introduce and administer the Cambridge EBA Model will be useful to other academic libraries in the development and customization of their own acquisition practices. Additionally, we believe that our study will also help publishers and providers understand the problems experienced by libraries in the development of acquisition strategies.

In this study, we posed the following questions:

1. Using the Cambridge EBA model, how much was the unit usage and average book cost for Hacettepe University Libraries?
2. How were the titles selected for purchase after the EBA period?
3. What was the distribution of the titles used in the Cambridge EBA model by subject and year?
4. Which administrator difficulties were faced during the implementation process?
5. Is the Cambridge EBA model suitable for Hacettepe University Libraries?

Within the scope of the license agreement, all e-books in the Cambridge University Press EBA collection were opened for access by Hacettepe University users, except for *Cambridge Companions*, *Cambridge Histories*, and textbooks. Additionally, Hacettepe University already had previously-purchased titles from Cambridge University Press in its collection. For this reason, aside from the previously-purchased titles, MARC records for the other e-books in the EBA model were requested from the publisher. MARC records of the titles added to the collection afterwards were sent by the publisher monthly, and added to the system. At the end of the license period, statistics were provided by the publisher's platform in exchange for

the previously agreed-upon sum of 30,290 USD. In celebration of the tenth anniversary of the publisher's EBA model, the publisher announced a special offer of an additional 10 percent of the agreed-upon sum for selections, increasing the overall selection value to 33,319 USD. To reach a decision about title selections, a list that included information about titles such as ISBN, price, subject, publication date, and product group was provided by the publisher. After that a list of e-books to be purchased according to frequency of usage was created. Additionally, Hacettepe University considered user preferences and collection control. Given the fact that there were existing Cambridge titles in the collection provided by other vendors, the selection list was checked for books already existing in the collection, which were then replaced by the next highest frequently used book. The unit usage and average cost of the books selected were calculated, and subject and publication year analyses were made. The publisher provided list prices required to make such analyses.

Unit usage and average book cost were calculated according to the equations below:

$$\text{Unit Usage Cost (UUC)} = \text{Total cost of the e-books purchased (C)} / \text{Total usage numbers for the e-books used within the time period (U)}$$

$$\text{Average Book Cost (ABC)} = \text{Total cost of the e-books purchased (C)} / \text{The number of the books purchased (P)}$$

Findings and Discussion

The EBA model, which is one of the e-book acquisition models provided by Cambridge University Press, was opened for access at Hacettepe University Libraries between December 16, 2019, and December 31, 2020, for unlimited users. As previously mentioned, at the end of 2020, selected books were added to the collection according to the licensing agreement, which was pre-paid, according to list prices.

To prevent the overlapping of MARC records uploaded to the system, previously purchased books were removed from the list, and the remaining 35,624 e-books were uploaded to the system. Permanent selections were made based on this upload. The selection according to e-book usage was made based on total item request statistics, extracted from COUNTER R5 reports, which were provided from administrator accounts at the publishing platform. Total item requests combines all "requests" for, or interactions with, a title. In other words, both entire book downloads and individual chapter downloads are counted as item requests.²⁰

The distribution of the books in the collection, according to categories specified by Cambridge University Press, is shown in Table 1 and Figure 1. More than half (52 percent) of the books were from the *Books for Research* category. *Coursebooks* (27 percent) came in second place, and the *Cambridge Library Collection* (19 percent) came in third. Looking at the number of unique books used, *Coursebooks* had the highest percentage (47 percent) of use, and *Books for Research* the second (41 percent) highest rate. The use rate of books from the *Cambridge Library Collection* and *Legacy Textbooks* was rather low. Looking at the distribution of the types of books purchased at the end of the model, *Coursebooks* had the highest percentage at 62 percent ($n = 105$), and *Books for Research* had the second highest percentage at 29 percent ($n = 49$). *Books for Research* and *Coursebooks* had the highest rankings among all the books opened for access. This caused an increase in the number of unique books and selected books, which were used from the same book type. Nevertheless, due to the high number of books opened for access, finding that the majority of the books used belonged to these types would not necessarily result in a complete evaluation on its own. It should not go without mention that overall e-resource usage and the use of *Research* and *Coursebooks* to support undergraduate education increased dramatically during the pandemic.

In general, looking at the ratio (7 percent) of the number of unique books to the total number of books (b/a), it can be seen that usage was quite low. Eighty-five percent of the *Legacy Textbook* type, 88 percent of the *Coursebook* type, 95 percent of the *Books for Research* type, and almost all (98 percent) of the *Cambridge Library Collection* type were hardly used. In other words, unfortunately, 93 percent ($n = 33,162$) of the books from Cambridge were never used at Hacettepe University Libraries.

Although the majority of the publisher's collection was open for access within the scope of the EBA model, the low number of used unique books ($n = 2,462$, or 7 percent), raises a few issues regarding the model and the collection presented. As Strothmann and Serrano also indicated, EBA agreements provide access to a certain collection without any flexibility, and thus libraries accept the risk of not meeting their expected usage beforehand.²¹ In addition, not adding *Cambridge Companions*, *Cambridge Histories*, and textbooks to the scope of the EBA model implemented by the publisher could be considered as another influence on the low number of used unique titles.

Looking at the total usage frequency of the books in the collection, *Coursebooks* had the highest percentage by 53 percent ($n = 19,599$), and *Books for Research* are second at 35 percent ($n = 12,865$). Purchased books ($n = 168$) were used 10,688 times in that year. This constitutes 29 percent ($n = 36,934$) of the total usage. Only 7 percent of the books

in the entire Cambridge EBA collection were used, and only 7 percent of those books were purchased because of high list prices. The number of purchased titles is so small relative to the collection size that the graphics bar representing it in figure 1 is not visible. Among Cambridge University Press e-books, *Coursebooks*, which support education and research activities, had the highest percentage both in terms of the used unique e-book quantity and usage frequency. See table 1 and figure 1.

In table 2, the distribution of e-books and their usage are shown based on the year of publication. More than half (54 percent) of books in the EBA model, and 39 percent of the used unique books were published in or before 2009. Twenty percent of the books in the collection and 31 percent of the used unique books were published in the past four years (2017–2020), and 35 percent of the total usage of the books belonged to this period. The highest rate for purchased books belonged to the year 2019 at 20 percent. Since the EBA model was first opened for use in 2020, the usage of books in that year was relatively lower. It was not possible to add books to the collection all at once. Adding MARC records to the system later, as new books were added to the collection, was one of the reasons for the late transmission of the books to users, resulting in the lower usage numbers.

It can be said that patrons used more recently published books in the Cambridge collection more often than books published in earlier years. The usage rate of books published 2017 to 2020, and the usage rate of books published before and during 2009, was approximately the same at 35 percent. Almost half of the purchased books consisted of recently published books. Overall usage was sorted from highest to lowest usage during selection, and the collection control of the books was made in the decision phase. By taking into consideration the books which were previously purchased from aggregators, the purchase of conflicting titles was prevented during collection control. In this way, recently published books with a high rate of usage were purchased, instead of older books which were already part of the collection.

Looking at the subject distribution of the e-books in the Cambridge EBA model, we observed that 80 percent ($n = 28,344$) of them belonged to the *Social Sciences and Humanities* category, 14 percent ($n = 4,991$) belonged to the *Science and Engineering* category, and 6 percent ($n = 2,289$) belonged to the *Medicine and Life Sciences* category (table 3). As might be expected, general usage in terms of the number of unique books used, *Social Sciences and Humanities* had the highest usage percentage 65 percent, while *Science and Engineering* books, and *Medicine and Life Sciences* books, were lower in terms of usage (17.5 percent) compared to the *Social Sciences and Humanities* category. However, looking at the ratio of the number of unique books used to the total number of books in the collection

Table 1. Distribution of E-books and E-book Usage According to Book Type

Book Type	E-Book Numbers								Usage			
	Total (a)		Used (b)		Selected (c)		b/a	c/b	Total		Selected	
	N	%	N	%	N	%	%	%	N	%	N	%
Books for Research	18,363	51.6	1,002	40.7	49	29.2	5.5	4.9	12,865	34.8	2,857	26.7
Cambridge Library Collection	6,688	18.8	145	5.9	7	4.2	2.2	4.8	1,789	4.8	410	3.8
Coursebooks	9,571	26.9	1,163	47.2	105	62.5	12.2	9.0	19,599	53.1	7,026	65.7
Legacy Textbooks	1,001	2.8	151	6.1	7	4.2	15.1	4.6	2,677	7.2	395	3.7
Silverberg's Principles	1	0	1	0.0	0	0.0	100.0	0.0	4	0.0	0	0.0
Total	35,624	100.1	2,462	99.9	168	100.0	6.9	6.8	36,934	100.0	10,688	100.0

Note: Some totals are not equal to 100.0%, due to rounding errors.

(b/a), we observed that the highest usage rate belonged to *Medicine and Life Sciences* (19 percent), and the lowest usage rate belonged to *Social Sciences and Humanities* (6 percent). Although the percentage of the *Books for Teachers in Social Sciences and Humanities* category was very low compared to the total number of books ($n = 43$, 0.1 percent), 30 percent of these books ($n = 13$) were used at least once. This was the highest ratio in the *Social Sciences and Humanities* category. The second highest usage rate belonged to *Psychology* books at 20 percent ($n = 138$). Thirty-three percent of the *Chemistry*-related books in the *Science and Engineering* category, and 27 percent of the *Medicine* books in the *Medicine and Life Sciences* category were used at least once (b/a). Books in some disciplines, where the ratio of the number of unique books used to the total number of books was relatively high (for example, *Chemistry*), were not added to the purchasing list. Total usage frequency of books and the existence of the previously purchased Cambridge books from other aggregators had a certain effect on the selection of books. It was known that previously purchased books had DRM restrictions. Users could access the same books without restrictions in the publisher's platform within

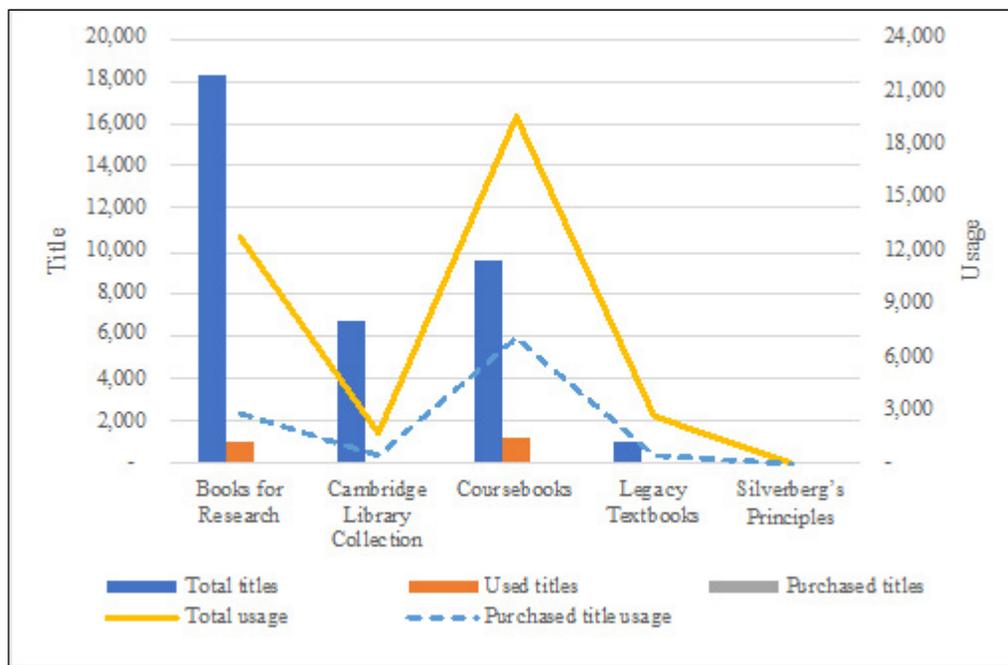


Figure 1. Distribution of E-books and E-book Usage According to Book Type

the scope of the Cambridge EBA model, which increased the number of unique books used. Differences between aggregator and publisher platforms affected e-book usage.

Fifty-seven percent of total usage ($n = 20,887$) belonged to *Social Sciences and Humanities*, 22 percent belonged to *Science and Engineering* ($n = 8,148$), and 21 percent ($n = 7,899$) belonged to *Medicine & Life Sciences*. *Life Sciences*, which composed 4 percent of the total collection, came in first place at 12 percent in terms of usage, and *Medicine*, which comprised 2 percent of the collection, came in second place at 10 percent.

Table 2. Distribution of E-books and E-book Usage According to Publication Year

Pub. Year	E-Book Numbers								Usage			
	Total (a)		Used (b)		Selected (c)		b/a	c/b	Total		Selected	
	N	%	N	%	N	%	%	%	N	%	N	%
2020	1,688	4.7	132	5.4	16	9.5	7.8	12.1	2,593	7.0	979	9.2
2019	1,779	5.0	227	9.2	33	19.6	12.8	14.5	4,396	11.9	2,398	22.4
2018	1,752	4.9	189	7.7	16	9.5	10.8	8.5	2,602	7.0	910	8.5
2017	2,057	5.8	212	8.6	15	8.9	10.3	7.1	3,207	8.7	1,209	11.3
2016	1,181	3.3	120	4.9	10	6.0	10.2	8.3	1,797	4.9	545	5.1
2015	1,492	4.2	149	6.1	13	7.7	10.0	8.7	2,037	5.5	696	6.5
2014	1,670	4.7	127	5.2	9	5.4	7.6	7.1	2,047	5.5	641	6.0
2013	1,729	4.9	137	5.6	9	5.4	7.9	6.6	2,247	6.1	594	5.6
2012	1,327	3.7	90	3.7	3	1.8	6.8	3.3	1,307	3.5	202	1.9
2011	555	1.6	23	0.9	0	0.0	4.1	0.0	281	0.8	0	0.0
2010	1,046	2.9	90	3.7	4	2.4	8.6	4.4	1,224	3.3	233	2.2
1899–2009	19,348	54.3	966	39.2	40	23.8	5.0	4.1	13,196	35.7	2,281	21.3
Total	35,624	100.0	2,462	100.0	168	100.0	6.9	6.8	36,934	100.0	10,688	100.0

Unit Cost

To make a more realistic cost calculation of the EBA model, the total usage of all e-books accessed during the year of implementation of the model, and the further usage of books purchased at the end of that year, should be considered together.

Unit usage cost and average book cost are calculated as follows:

$$UUC = C / U \rightarrow UUC = 30,290.00^{22} / 36,934 \rightarrow UUC = 0.82 \text{ USD}$$

$$ABC = C / P \rightarrow ABC = 30,290.00 / 168 \rightarrow ABC = 180 \text{ USD}$$

Unit usage cost using the EBA model was 0.82 USD, while on average the cost of one book was 180 USD. Since the books were purchased based on their list price, purchasing cost was high. As is also pointed out in the study by Kwok et. al, the EBA model can be an expensive solution for some libraries.²³ Additionally, the average book cost should not only be calculated using the cost of the individual book purchased; it should also be calculated considering the cost of all other unpurchased books used during the implementation year. In this way, the Cambridge EBA model was an economical model for Hacettepe University Libraries, and enabled the selection of e-books which are expected to be used in the future. The calculated unit cost will decrease with further usage of the purchased books.

Conclusions and Recommendations

While the unit usage cost of the Cambridge EBA plan at Hacettepe University Libraries was calculated at 0.82 USD, and the average book cost was calculated at 180 USD, only 7 percent of the books in the Cambridge collection ($n = 2,462$) were used and only 7 percent of those books ($n = 168$) were purchased. Purchased books made up 29 percent of total book usage. Analyzing the book types, it was observed that more than half of the collection (52 percent) consisted of *Books for Research*, 27 percent consisted of *Coursebooks*, and 19 percent consisted of *Cambridge Library Collection* books. Looking at the number of unique books used, we observed that *Coursebooks* came in first place with 47 percent, and *Books for Research* came second with 41 percent. The same ranking is also valid for total usage. Looking at the types of purchased books, it was observed that *Coursebooks* came first (62 percent), and *Books for Research* came second (29 percent). We also concluded that e-resource usage generally increased during the COVID-19 pandemic.

In general, it was observed that the number of unique books used from the Cambridge EBA model was quite low, while books of some types were hardly ever used. For instance, almost all (98 percent) books in the *Cambridge Library Collection* (composed of out-of-copyright and rare books, mainly from the eighteenth and nineteenth centuries) were never used at any time during the year. It is concluded that access to only certain book types (not including textbooks which would increase usage) affected total usage.

Table 3. Distribution of E-books and E-book Usage According to Subjects

Subject	E-Books								Usage			
	Total (a)		Used (b)		Selected (c)		b/a	c/b	Total		Selected	
	N	%	N	%	N	%	%	%	N	%	N	%
Social Sciences & Humanities												
Anthropology	424	1.2	29	1.2	3	1.8	6.8	10.3	410	1.1	150	1.4
Archaeology	531	1.5	27	1.1	2	1.2	5.1	7.4	337	0.9	98	0.9
Art	234	0.7	10	0.4	1	0.6	4.3	10.0	192	0.5	78	0.7
Books for Teachers	43	0.1	13	0.5	2	1.2	30.2	15.4	317	0.9	157	1.5
Classical Studies	1,467	4.1	65	2.6	4	2.4	4.4	6.2	745	2.0	226	2.1
Drama & Theatre	172	0.5	15	0.6	0	0.0	8.7	0.0	118	0.3	0	0.0
Economics	1,261	3.5	69	2.8	0	0.0	5.5	0.0	754	2.0	0	0.0
General (Humanities & Social)	568	1.6	52	2.1	3	1.8	9.2	5.8	833	2.3	256	2.4
Geography	369	1.0	5	0.2	0	0.0	1.4	0.0	41	0.1	0	0.0
History	7,574	21.3	240	9.7	11	6.5	3.2	4.6	2,666	7.2	738	6.9
Language & Linguistics	1,210	3.4	135	5.5	20	11.9	11.2	14.8	2,633	7.1	1,381	12.9
Law	2,264	6.4	202	8.2	15	8.9	8.9	7.4	2,624	7.1	885	8.3
Literature	460	11.4	257	10.4	13	7.7	6.3	5.1	2,807	7.6	802	7.5
Management	311	0.9	30	1.2	1	0.6	9.6	3.3	436	1.2	54	0.5
Music	760	2.1	10	0.4	1	0.6	1.3	10.0	136	0.4	48	0.4
Philosophy	1,530	4.3	86	3.5	2	1.2	5.6	2.3	873	2.4	100	0.9
Politics & Int. Relations	2,878	8.1	149	6.1	5	3.0	5.2	3.4	1,439	3.9	312	2.9
Psychology	696	2.0	138	5.6	21	12.5	19.8	15.2	2,871	7.8	1,494	14.0
Religion	1,332	3.7	29	1.2	1	0.6	2.2	3.4	230	0.6	40	0.4
Social Sci. Res. Methods	13	0.0	0	0.0	0	0.0	0.0	0.0	0	0.0	0	0.0
Sociology	647	1.8	40	1.6	1	0.6	6.2	2.5	425	1.2	57	0.5
<i>Sub-total</i>	<i>28,344</i>	<i>79.6</i>	<i>1,601</i>	<i>65.0</i>	<i>106</i>	<i>63.1</i>	<i>5.6</i>	<i>6.6</i>	<i>20,887</i>	<i>56.6</i>	<i>6,876</i>	<i>64.3</i>
Science & Engineering												
Chemistry	60	0.2	20	0.8	0	0.0	33.3	0.0	354	1.0	0	0.0
Computer Sci.	366	1.0	64	2.6	7	4.2	17.5	10.9	1,618	4.4	454	4.2
Engineering	655	1.8	103	4.2	6	3.6	15.7	5.8	2,041	5.5	301	2.8
General Sci. (Science)	219	0.6	8	0.3	0	0.0	3.7	0.0	167	0.5	0	0.0
Mathematics	1,356	3.8	63	2.6	3	1.8	4.6	4.8	1,178	3.2	285	2.7
Physics & Astronomy	1,304	3.7	67	2.7	4	2.4	5.1	6.0	1,123	3.0	175	1.6
Statistics & Probability	195	0.5	30	1.2	4	2.4	15.4	13.3	639	1.7	194	1.8
Earth & Environ. Sci.	836	2.3	75	3.0	2	1.2	9.0	2.7	1,028	2.8	95	0.9
<i>Sub-total</i>	<i>4,991</i>	<i>14.0</i>	<i>430</i>	<i>17.5</i>	<i>26</i>	<i>15.5</i>	<i>8.6</i>	<i>6.0</i>	<i>8,148</i>	<i>22.1</i>	<i>1,504</i>	<i>14.1</i>
Medicine & Life Sciences												
Life Sciences	1,485	4.2	217	8.8	9	5.4	14.6	4.1	4,366	11.8	459	4.3
Medicine	804	2.3	214	8.7	27	16.1	26.6	12.6	3,533	9.6	1,849	17.3
<i>Sub-total</i>	<i>2,289</i>	<i>6.4</i>	<i>431</i>	<i>17.5</i>	<i>36</i>	<i>21.4</i>	<i>18.8</i>	<i>8.4</i>	<i>7,899</i>	<i>21.4</i>	<i>2,308</i>	<i>21.6</i>
Total	35,624	100.0	2,462	100.0	168	100.0	6.9	6.8	36,934	100.0	10,688	100.0

More than half (54 percent) of books in the EBA model, and 39 percent of the used unique books were published in or before 2009. Books published 2017 to 2020 consisted of 35 percent of total usage, and 48 percent of purchased books. A vast majority of the collection (80 percent) consisted of books from the *Social Sciences and Humanities* category. Consequently, this category of books had the highest number of unique books used at 65 percent. Again, although they were only 6 percent of the total collection, *Medicine and Life Sciences* books had a higher usage rate (b/a) than other books.

For these e-books to be available to our users, we loaded the MARC records into our system. It is not always possible for users to choose and scan publishing platforms directly from among many databases. This circumstance reduces the usage of collections, which in turn reduces the return on investment for libraries. For this reason, it is of utmost importance for MARC records to be fully uploaded to discovery services or library catalogues, and for users to be informed accordingly. After removing the MARC records of previously accessible books from an EBA collection, publishers should send the remaining MARC records to libraries correctly and in a timely manner. In the implementation process of the model at Hacettepe University Libraries, all the MARC records of the books were logged into the system at the beginning of the implementation period, and newly added titles were added monthly. To add new sources to an EBA model, to present them to users in a timely manner, and to ease access, workflows between different library departments should be examined closely.²⁴

Publishers should also inform libraries about changes to the collection and illegal usage in a timely manner. Although Hacettepe Libraries did not experience any problems in this regard during the implementation of the EBA model, illegal or automated usage that is not stopped immediately will be counted in statistics as usage regardless, thus distorting usage data for libraries employing usage-based subscription models. Additionally, after making the selection, an overlap check should be carried out between the library's collection and selected titles from the EBA collection, to prevent duplicate purchases. The advantages of an EBA model can be maximized when librarians have significant input into title selection.

Publishers should share their accurate and up-to-date book lists, including prices, publication dates, and subject categories. This information is necessary for decision makers during the selection phase. Libraries should evaluate these lists using usage statistics taken from administrator accounts, and make cost and subject analyses. Since usage statistics do not include certain kinds of information, such as subject, book type, and cost, publishers should provide some support for creating a more comprehensive list, whenever possible.

Although an EBA model provides access to a wide collection, some book types may not be included in the collection. We consider this to be one of the reasons for a low usage rate of the total collection. Price difference may be among the reasons why some book types are not included in an EBA collection; but at the end of the license period, a purchase has already been made at list prices. We assume that price difference may not be the only factor in book type inclusion by the publisher. We also believe that keeping the collection large will not be a loss for publishers in terms of cost; on the contrary, it will contribute positively to a preference for an EBA model by libraries because of high usage. In succeeding years, low usage at a library may cause it to discontinue use of an EBA model, and also negatively influence that library's consideration of competing EBA models. For license agreements between consortia and publishers, collections which all member institutions of a consortium may benefit from will allow the use of an EBA model in a much more economical way.

Although it is possible to decrease costs with usage-guaranteed purchases, make better book selections, and manage library budgets more efficiently by using EBA models, it is probably not a good choice for libraries with a weak understanding of collection usage. During the decision phase the following factors should be carefully evaluated: the collection proposed by the EBA model, user profile, library budget, and usage data from the use of previous e-resource collections. It should not be forgotten that an EBA model carries the risk of purchasing books that will never be used.

The EBA model experience allowed Hacettepe University Libraries to make cost-benefit comparisons with books previously purchased by other means and acquisition models. The Library made choices based on the observation of usage data, which kept user needs in the foreground. Additionally, considering the ongoing and future use of previously purchased books, we believe that the EBA model will be an economically appropriate choice. Future acquisition agreements based on an EBA model should ensure that care will be taken to regularly maintain MARC records for new books, informing users of their upload to the system. Particular attention should be paid to the accuracy and completeness of the title information list used during the selection phase; we will request a combined title information and a usage data list from the publisher. During the process of title selection, we will conduct collection control, and will note books from other compilers to prevent duplicate purchases. Since books are purchased according to the list price at the end of the model period, it may appear as though the number of books is limited, and the average cost of the books is high. In the future, we plan to track the use of previously purchased books and re-evaluate expenses. We continue to evaluate EBA models from different

publishers at Hacettepe Libraries, and to prioritize user needs in making purchasing decisions, as was done with the Cambridge EBA.

Based on the results of our study, we conclude that the Cambridge EBA model was indeed the correct choice for Hacettepe University Libraries.

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