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As public libraries balance the increasing demand for online resources with budgetary constraints, information about the value of online resources to patrons will help library administrators prioritize their efforts. Many researchers have studied the value of public libraries more generally, but this study estimates the value of library-provided online resources through an evaluation of library patrons' willingness to pay. Results indicate limited relationships between respondent-specific variables and patron willingness to pay, but several library-specific variables were found to be significantly related to patron willingness to pay. A discussion of these results and recommendations for applying this research to public library administration are included in this paper.

Headings:

Public Libraries – North Carolina Electronic Books – Evaluation Audiobooks – Evaluation User Studies – Electronic Information Resources

THE VALUE OF ONLINE RESOURCES TO NORTH CAROLINA PUBLIC LIBRARY PATRONS

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Introduction

There are plenty of reasons to feel pessimistic about the future of public libraries. The iPhone's Siri puts a reference librarian in your pocket. Decreased government spending on every level is hitting library budgets hard. Publishing companies are trying to cut libraries out of the digital distribution picture. Netflix is more popular than God and easier to use than a spoon. It is easy to see why some librarians have subscribed to the "libraries are screwed" viewpoint (Neiburger, 2010), but even the most optimistic of librarians will concede that the traditional public library faces a harsh new reality with plenty of challenges ahead.

One major challenge is that the brand of libraries is still books (OCLC, 2010), and books are quickly becoming an "outmoded" technology (Neiburger, 2010). When you can access the information online and download it to a portable device, a trip to the library is right up there with renting a movie from Blockbuster. Although many public libraries have tried to keep up with the latest trends for providing innovative information services to their patrons, the pace of technological change is leaving many public libraries behind.

A second major challenge is that libraries, like all publicly funded agencies, are under intense pressure to cut costs. This pressure has led to lay-offs, down-sizing staff through attrition, and reduced open hours. Some local governments have even privatized library services with the hope of saving money (Goldberg, 2011). For libraries, proving their worth to administrators, politicians, and the community has become a necessity as they compete for scarce resources. To remain a relevant information resource in this increasingly digital world, public libraries must address these challenges. Public libraries need to offer services that keep pace with popular technology, and they need to demonstrate the value of offering these services to the community. Although plenty of studies demonstrate the value of public libraries, there is a lack of research about the value of online resources to public library patrons. To contribute to the knowledge about the value of online resources, this study focused upon three popular online formats offered by all North Carolina public libraries through the NC LIVE consortium—eBooks, eAudio books, and online videos. The study intends to answer two research questions:

- How much money are library patrons willing to pay to use a library-provided eBook, eAudio books, or online video?
- 2) What factors are related to library patron willingness to pay for these resources?

The answers to these questions will help public libraries begin to understand how their patrons value their investments in online resources and what their communities' characteristics might reveal about how these resources are valued.

Literature Review

Even before the Great Recession, public libraries recognized the importance of demonstrating their value to their communities, lawmakers and administrators. Matthews (2011) found 27 return on investment studies from public libraries in the United States between 1999 and 2008, each able to point to a specific number—a dollar amount that the library is producing in value for every dollar that it receives in funding (p. 5). Libraries rely on this dollar amount "as a way to develop quantitative support in order to politically, economically or socially influence a decision" because "traditional justifications for library funding, usually a usage or output measure such as annual circulation, [...] is not as effective as it once was" (p. 1).

In order to survive the "tug-of-war for funding" (Matthews, 2011, p. 1), public libraries must be able to show how they are adding value to their communities. Public libraries that can cite a specific dollar amount have a particularly powerful sound bite for their stakeholders. Theyer (2008) writes about the significance that this number can have for taxpayers. "Tell them in dollars and cents what their money is buying in terms of movie rentals, books purchases, computer time, programs, expert personal assistance, and other things that do cost a lot of money on the open market" (p. 45). Similarly, Kaser (2010) urges librarians to put those numbers to good use. "No matter what number you come up with, carry it around in your hip pocket just in case the budget man comes to your door asking you to prove your worth" (p. 1). Whether the audience is a library board, the state legislature or a group of citizens, having one tangible number with a dollar sign in front seems to give a significant advantage. Calculating that tangible number, of course, is easier said than done. Matthews (2011) provides a summary of various methods for determining the value of public libraries, but explains that because so many different methods are used to assess value, the numbers are not easily compared between libraries and across states (p. 7). Lown and Davis (2009) express a similar concern: "ROI [return on investment] metrics are estimates that are based on surveys of their own local users combined with metrics that are relevant to their own budget systems. Any attempt to compare ROI metrics across these boundaries doesn't make sense and is not relevant" (p. 4). This lack of transferrable data puts the burden upon individual libraries or library systems to complete their own valuation studies, but the cost may be prohibitive. For instance, Elliott, Holt, Hayden and Holt (2007) make a low estimate of \$20,000 to commission a cost-benefit analysis for a public library (p. 32).

Libraries sometimes attempt to shortcut this process by using fair market value data to create library value calculators. Library value calculators, like the one featured on the Massachusetts Library Association website (MLA, 2008), often use fair market value to calculate cost avoidance. They purport to show patrons how visiting the library translates into savings for their families. The fair market value of any good, however, is not an accurate measure of the consumer value of that good because it may overestimate the value to consumers (K. Smith, personal interview, June 10, 2011). If a patron borrows four eBooks through her public library's website, a library value calculator might determine that she has saved \$60, estimating a fair market value of \$15 per eBook (Amazon Kindle Store, 2011). The problem with this calculation is that it assumes that she would have actually spent \$60 on eBooks. Perhaps she is only willing to spend \$5 per eBook. She will download the eBooks for free from the library, but she is unlikely to spend \$15 per eBook because it is not worth it to her. In this case, the market value is overestimating the value she derives from the eBook.

Similarly, fair market value may underestimate the value to consumers (Mankiw, 2009, p. 139). If a person buys an eBook for \$15, but would have been willing to pay \$25, the market price of that eBook is less than the value that he has placed upon the eBook. The difference between the two prices is called consumer surplus—the extra amount of consumer benefit that the consumer did not have to pay for (p. 139). If we use the market price to estimate value to the consumer in this case, we underestimate how much benefit this person received from the good.

Another problem with using fair market value for library resources is that private goods are inherently different from public goods. The consumer's expectations and benefits may be different when using a private good rather than a public good (K. Smith, personal interview, July 12, 2011). For example, someone who purchases a book decides that it is worth to her at least the market price, and she expects that the book will belong to her after she purchases it. In contrast, when someone borrows a book from the library, she decides it is worth the time and effort it took for her to get to the library, and she expects that she must return the book after a specified time. If we use the fair market value of a book to determine the value of borrowing that book from the library, we are ignoring the important differences in consumer experience and expectations. The fair market value of a book will not accurately capture the benefits that people get from borrowing a library book because these goods are not perfectly comparable. When we use fair market value to determine the value of a public good to consumers, we make an inaccurate estimate. This dilemma is not particular to public libraries. Public goods in general are difficult to value. City sanitation services, public transportation, public safety, parks and recreation—each of these public goods lacks an adequate market equivalent to help us determine its value. Economists have relied upon willingness to pay (i.e., contingent valuation) studies to estimate the value of public goods in a number of contexts, such as environmental resources and local government services.

One of the most famous and influential willingness to pay (WTP) studies was conducted after the Exxon Valdez oil spill in 1989, during which 11 million gallons of crude oil spilled into Prince William Sound (Carson, Mitchell, Hanemann, Kopp, Presser, & Ruud, 2003, p. 257). Researchers estimate that "250,000 seabirds, 2,800 sea otters, 300 harbor seals, 150 bald eagles, up to 22 killer whales, and billions of salmon and herring eggs died as a direct result of the spill" (Steyn, 2003, p. 305). The loss of these animals and the damage inflicted upon Alaska's natural resources could not have been estimated by a market value because it is not possible to determine the market price of a sea otter or the Alaskan shoreline. Nonetheless, the State of Alaska and the Federal Government wanted to recoup the loss of their natural resources by collecting damages from Exxon, and they intended to pursue the matter in court (Carson et al., 2003, p. 257). In order to demonstrate the value of these natural resources, several researchers created a study to examine their value to the American public. In a paper describing their methodology for this study, Carson, Mitchell, Hanemann, Kopp, Presser, and Ruud (2003) explain why WTP studies are ideal for valuing a public good: "Contingent

valuation is a survey approach designed to create the missing market for public goods by determining what people would be willing to pay (WTP) for specified changes in the quantity or quality of such goods" (p. 258). Even though most Americans were likely never to use the resources directly, the study attempted to put a monetary value on the lost resources by asking people what they would be willing to pay to prevent a future oil spill. Today this study serves as "a reference point that may be used to assess the criticisms of [contingent valuation] and perhaps the more general debate surrounding passive use" (Carson et al., p. 259).

In another WTP study, Simonsen and Robbins (2003) measured citizen WTP to help solve a local government budget crisis in Waterford, Connecticut. They asked citizens of Waterford how much of a property tax increase they would tolerate to avoid an imminent budget shortfall (p. 836). Their results showed that "a positive view of government and government services leads to a higher level of support for taxes" (p. 846), but they also demonstrated that people who were dissatisfied with government services were not more likely to refuse paying increased property taxes. Simonsen and Robbins use their results to suggest that citizens behave rationally when facing difficult choices, regardless of their attitude toward the government (p. 851).

Public libraries have also used WTP studies to demonstrate value to their communities, lawmakers and administrators. Researchers have conducted WTP studies in public libraries throughout the world, and the following sub-sections describe several of the most significant studies from this body of literature.

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United States

In the late 1990s, the St. Louis Public Library conducted a return on investment study which included a WTP assessment. Not only were the authors of the study interested in determining the return on investment for St. Louis's taxpayers, but they also wanted to "develop and test a practical, conservative methodology that large urban public libraries can use to estimate and communicate the direct return on annual taxpayer investment" (Holt, Elliott, & Moore, 1999, p. 2). The authors of the study measured direct benefits by asking library card holders about their WTP for various library services, their willingness to accept the loss of library services, and the cost of their time. Their results gave them the sound bite they wanted: "And what we have proved is that on average for every dollar the public has invested in library services, the direct benefits just to library users is \$4" (p. 11).

In 2006, the Library Research Service (a division of the Colorado State Library) worked with eight of Colorado's public libraries to determine their return on investment. Their survey asked "typical" library users about their time and expense for traveling to the library, as well as their WTP for annual use of their library cards (Steffen, Lietzau, Lance, Rybin, & Molliconi, 2009, p. 5). Return on investment was calculated for each of the eight participating libraries. On average, "for every \$1.00 spent on public libraries, \$5.00 of value was realized by our taxpayers" (p. v). The survey asked respondents about their use of many types of library services, as well as their purpose for using library resources. However, the study did not include an analysis to determine if these variables were related to WTP.

United Kingdom

Morris, Sumsion, and Hawkins (2002) questioned over 550 public library users from four public library locations when returning books. Respondents were asked about their personal characteristics, the type of book they borrowed, their purpose for using the book, their reasons for borrowing the book (instead of purchasing), their enjoyment of the book, and the price they would have paid to rent the book, if it had not been available at the library (p. 79). Using the unique concept of "reads" to determine the overall benefit of library books, Morris et al. determined "a value in excess of £815,000 per annum for those services that can be assessed in monetary terms" (p. 86). They also found that the type of resource borrowed did not reveal significant differences in WTP and found "no dramatic links between purpose and the price a borrower would be prepared to pay" (p. 80). Respondent age, however, seemed to be related to WTP in this study (p. 80).

Pung, Clarke, and Patten (2004) studied the British Library using the contingent valuation method to gauge the value of their services. They asked questions regarding demographics, library use, service awareness, expenditures, substitute goods, WTP for and willingness to accept various service levels (p. 92). They also asked respondents to rate the importance of various library services, but did not discuss how these ratings might be related to WTP. Their results showed that "the Library generates value of around 4.4 times the level of its annual public funding of £85m" (p. 79). Their study also found that "84% of all non-users interviewed felt that the British Library had a value for society as a whole" (p. 88).

<u>Norway</u>

Aabø (2004) presents the methodology and findings from her dissertation in library science, which investigated the value of Norwegian public libraries using both WTP and willingness to accept methods. Overall, her results show that "the population's valuation of public libraries seems to lie within the range of 400-2000 NOK per household [...] This in case implies that, *as an average over all households*, the benefits from public libraries are greater than the costs of producing such library services" (p. 196). Aabø also asked respondents about their number of annual library visits and found evidence of a relationship between frequency of use and WTP (p. 186-187). She also found that income was related to WTP and that "rural residents and town folks have less WTP than city dwellers" (p.184).

In a different study from 2009, Aabø conducted a multivariate regression analysis to demonstrate which methodologies (cost/benefit, contingent valuation, or secondary economic) reveal the highest rates of return on investment for American public libraries (the only data set large enough for this type of analysis). Aabø concluded from her regression analysis that "cost/benefit analysis (CBA) combined with market analogy methods or measurements of secondary economic impacts give a higher [return on investment] figure than CBA combined with contingent valuation" (p. 321). In other words, contingent valuation (i.e., WTP) is a more conservative approach to determine the value of public library resources.

<u>Australia</u>

Hider (2008) surveyed a random sample of Wagga Wagga, New South Wales residents about the value of their public library. He used a referendum elicitation format, asking respondents to hypothetically vote for or against a monthly charge to fund the public library (p. 446). The analysis of results included a regression model with the variables sex, education, income and price (p. 450). Price was the most significant predictor of whether or not a respondent would vote for or against the monthly charge, although education level and income were also found to be statistically significant factors (p. 450). Hider's results ultimately showed a 1.33:1 return on investment ratio for the Wagga Wagga City Library (p. 452).

South Korea

Lee, Chung, and Jung (2010) attempt to measure the effect of warm glow (the feeling of goodness people derive from supporting a public good) in public library valuation studies. They asked public library patrons about their WTP for library services, but also asked them to agree or disagree with several warm glow indicators, such as "I am willing to donate money for fundraising campaigns to promote public library services" (p. 241). They found that respondents who felt good about supporting the library were likely to be willing to pay more. They also found that the level of satisfaction with public libraries did not affect WTP, while income and education levels were positively related to WTP (p. 242).

Chung (2008) explains several techniques for eliminating common problems of WTP studies. The dissonance minimizing technique, for example, avoids emotionally motivated high or low WTP responses by giving people options to express emotion in addition to assigning a dollar value (p. 72). Another technique, called information bias minimizing, helps people become familiar with the good so that they can value it

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accurately. Chung's results indicate that dissonance minimizing and information bias minimizing techniques can increase the accuracy of WTP amounts (p. 78).

These studies emphasize the benefits of using the WTP methodology for valuing a public good. They also provide guidance for designing a WTP study that will be methodologically rigorous and uphold the high standards of economic research.

The abundance of public library literature devoted to explaining and promoting valuation studies indicates that librarians are concerned about this topic. While many public libraries have conducted valuation studies, there is a lack of research that focuses specifically upon the value of online resources. This research begins to address this gap in the literature, particularly for North Carolina's public libraries. By applying the methods from previous studies to this research question about the value of online public library resources, this study adds to an important conversation in the library literature.

Methodology

This study was developed to discover information about the value of online resources to public library patrons. The following two sub-sections will describe how the study was conducted.

Survey Design

Using the WTP studies from the literature for guidance, an online survey was designed to discover how much money North Carolina public library patrons are willing to pay for eBooks, eAudio books, and online videos. The survey also included questions about a number of factors that were found to be significant predictors of WTP in previous studies. Each of the factors included in this study has been observed in multiple WTP studies, and with the exception of "Purpose for using online resources," all factors were related to WTP responses in at least one previous study. These factors were broken down further into variables, some of which came directly from the literature, and some of which were original for this research. See Appendix A for a full list of variables and how they were measured for this study. The factors included in this study were:

- 1) Frequency of using resources
- 2) Satisfaction with the library's resources
- 3) Purpose for using online resources
- 4) Importance of library services in general
- 5) Personal and family characteristics.

Library-specific characteristics were also included in the analysis with data gathered from the State Library of North Carolina website.

The survey was created in Survey Monkey for ease of distribution and replication. See Appendix B for the survey's full text. Although answers were gathered at the individual level, respondents were asked to consider the entire family's use and valuation of these resources in their responses. In order to participate, respondents were required to state that they were 18 or older.

To elicit their WTP amounts, respondents were presented with a hypothetical situation in which their library could no longer afford to provide eBooks, eAudio books and online videos for free (at the point of use). Respondents were then presented with a payment card—a range of specific payment options (between \$0 and \$5.00 or more) and asked to select the maximum amount that they would be willing to pay to use a particular resource through the library's website. This payment card format was a stronger alternative to an open-ended response, which "tends to produce an unacceptably large number of nonresponses" since people "often find it difficult to pick a value out of the air" (Mitchell & Carson, 1989, p. 97). However, presenting respondents with specific options carries the risk of an anchoring effect (p. 101). A preferred method would have incorporated various ranges of options, randomly assigned to respondents, but survey software limitations prevented this more sophisticated approach. The simple payment card format used in this study was a feasible method that minimized the risk of discouraging respondents and provided them with as much flexibility as possible, given the survey software limitations.

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Respondents who indicated that they would pay nothing for these services were presented with a follow-up question to better understand their refusal to pay. This type of follow-up question allows respondents to disclose their motivation for refusing to pay and can provide useful information about the respondent's valuation. For example, a person who refuses to pay because he is not interested in using the resource is expressing a different motivation for his WTP than a person who refuses to pay because he cannot afford to.

Many WTP studies include specific information about the payment vehicle, or the method through which the hypothetical payment would occur. However, Noonan (2003) found through his meta-analysis of WTP studies that an omitted payment vehicle did not result in statistically different WTP responses than studies that described the payment vehicle as a tax or a private fund (p. 169). Furthermore, explaining how a hypothetical payment would occur added excessive length to the survey. Therefore, a specific payment vehicle was not disclosed to survey respondents. Instead, respondents were simply asked to select the maximum amount that they would pay to use an eBook, eAudio book or online video through the library's website.

In many WTP studies, information bias is minimized by providing detailed information about the good or service to all respondents. However, "such an overview might be new information for some respondents, rather than a clarification or a reminder of what they are voting on" and could impact the way a respondent votes (Hider, 2008, p. 454). In this study, providing additional information about the eBook, eAudio book, and online video collections available through NC LIVE or through specific libraries was likely to influence library patrons as propaganda. Because the survey was targeted at

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library patrons who were already using online library resources, the assumption was made that respondents had a basic understanding of eBooks, eAudio books, and online videos. If respondents were unsure about a resource, they were able to select "I don't know" or skip the question.

Survey Distribution

In order to make the results as generalizable as possible, all 77 North Carolina public libraries were invited to participate in the study. Greg Needham, Director of Sheppard Memorial Library in Pitt County, advertised the study through the North Carolina Public Library Directors listserv. NC LIVE staff members also made phone calls to recruit libraries for this study. Thirty-three of the 77 libraries agreed to participate. See Appendix C for a list of all the participating libraries and a map displaying their locations.

While the survey was open, library patrons from these participating libraries who logged in to use an NC LIVE resource, or who used an NC LIVE resource at the library, were presented with a modified "splash page." A normal splash page displays the NC LIVE logo while the resource is loading. But in order to invite library patrons to take the survey, a message was displayed below the logo only for participating libraries. See Appendix D for the standard and modified splash pages.

If a respondent clicked on "Yes, I'll take the survey now," a new window opened to display the survey. Their requested resource still opened in the background, and they were able to continue with their NC LIVE resource and minimize the survey window at any time. If the respondent was using a personal computer at home, clicking on "Yes, I'll take the survey now," "I've already taken the survey," or "No, please don't ask me again" gave their browser a "Survey Seen" cookie that lasted for six months. This cookie allowed them to continue requesting NC LIVE resources without being invited to complete the survey multiple times. If they selected "Ask me again later," their browser received a cookie that expired at midnight so that the survey invitation would display again on the following day.

Patrons who responded using a public computer at the library most likely saw the survey invitation each time they began a new internet session, no matter which option they chose. On public computers, browsers are often set to clear the cookies each time the program closes.

Since library patrons logged in to NC LIVE with a library card number or libraryspecific password, their responses were categorized by library name. When respondents clicked on the "Yes, I'll take the survey now" response, the library name was captured by Survey Monkey. After the survey was closed, the three library-specific variables were added into the dataset with information from the State Library of North Carolina's website.

This study was limited to library patrons who clicked on NC LIVE-provided resources through their libraries' websites or by visiting the NC LIVE website directly. The number of uses that occurred among the 33 participating libraries while the survey was open was 16,395, but the number of unique visitors is not captured and therefore a response rate for this survey cannot be determined. Furthermore, since the survey distribution was not randomized, a self-selection bias among respondents is possible.

Findings

Descriptive statistics

The survey received 471 valid responses from among the 33 participating libraries. The following sub-sections display descriptive statistics about the respondents. *Willingness to pay*

Responses for all three resources followed roughly the same pattern, with peaks at \$0 and \$1.00. Respondents who selected "No opinion because we don't use these" and respondents who exited the survey early were excluded. Responses are highly correlated across all three resources, indicating that people tend to provide similar valuations for the use of eBooks, eAudio books and online videos (Pearson correlation between eBook willingness to pay and eAudiobook willingness to pay is .919; between eBook willingness to pay and online video willingness to pay, .877; between eAudiobook willingness to pay and online video willingness to pay, .872.). For all three resources, the majority of respondents are willing to pay an amount greater than \$0. Among respondents who are willing to pay something, the most common willingness to pay response is \$1.00. Among respondents who are willing to pay nothing, the most common reason is an objection to paying a fee to use a library resource. See Figures 1, 2, and 3 for charts displaying WTP responses.







Frequency of using online resources (during the past 12 months)

Seventy percent of respondents visited the library more than once a month (N=455). Forty percent of respondents have used an eBook (N=412), 30 percent have used an eAudio book (N=395), and 30 percent have used an online video (N=392) through their library's website. Thirty percent of respondents have paid for an eBook (N=401), 17 percent have paid for an eAudio book (N=385), and 43 percent have paid for an online video (N=401) using services like Netflix, Amazon and iTunes.

Satisfaction with the library's online resources

About 40 percent of eBook users (N=152), 40 percent of eAudio book users (N=127), and 35 percent of online video users (N=95) described their library's selection as "above average" or "excellent." About 80 percent of eBook users (N=146), 70 percent of eAudio book users (N=122), and 85 percent of online video users (N=97) thought that using these resources through the library's website was "somewhat easy" or "very easy." *Purpose for using online resources*

Table 1 displays the number of respondents who indicated that they use these resources, either through the library or by paying for the service, for the following purposes.

Table 1: Number of respondents using online resources for various purposes					
Purpose	eBooks	eAudio books	Online videos		
For entertainment or personal interests	181	125	177		
To meet needs as a student	58	21	37		
To meet needs as an educator	26	11	28		
For current job	23	14	16		
Other purposes	20	6	13		

Table 1. Number of regnandants using only .

Importance of library services in general

Eighty-six percent of respondents said that library services are very important for their families (N=398). Ninety-two percent of respondents said that library services are very important for their communities (N=378).

Personal and family characteristics

Thirty-five percent of respondents are male and 65 percent are female (N=384). Sixty-nine percent of respondents have at least a four-year college degree (N=388). Eighty-three percent of respondents are white, 10 percent are black and 2.4 percent are Hispanic (N=374). Nearly 50 percent of respondents are between the ages of 45 and 64 (N=379). Eighty-five percent of respondents have at least one other family member (N=376). The most frequently selected income range was \$50,000 to \$74,999, with 25 percent of respondents falling into that category (N=288).

Library characteristics

Three percent of respondents are from municipal libraries, 87 percent from county libraries, and 10 percent from regional libraries. Sixty-four percent of respondents have access to OverDrive eBooks, 60 percent have access to OverDrive eAudio books, and 39 percent have access to OverDrive online videos through their public library. Forty-eight percent of respondents are from libraries that spend less than \$20 per capita. Fourteen percent of respondents are from libraries with service populations less than 100,000.

Cross-tabulations

Cross-tabulations were used to determine which factors are related to a library patron's willingness to pay for all three resources. To simplify the analysis, respondents were collapsed into "willing to pay something" and "willing to pay nothing" categories.

Respondents who answered "No opinion because we don't use these," "I don't know," and respondents who skipped the question were excluded from cross-tabulations. Respondents who did not use these resources but did provide willingness to pay responses were included in the analysis. Willingness to pay responses were given by 55% of eBook non-users, 41% of eAudio book non-users, and 54% of online video nonusers.

Despite the trends noted in previous literature, this study found only limited relationships between respondent-specific variables and willingness to pay. The following sections describe the results from the cross-tabulation analysis.

Neither the frequency of visiting the library in person, nor the frequency of using the online resources through the library's website, predicted whether or a not a respondent was likely to be willing to pay to use those resources.

Statistically, respondents who used a paid service for an eBook during the past 12 months are significantly more likely to be willing to pay something for library eBooks (N=280, chi-square value 4.650, 95% confidence). However, this relationship between paying for an online resource and willingness to pay for the library resource was not statistically significant for eAudio books and online videos.

Neither satisfaction with using online resources (measured by selection and ease of use), nor the purpose for using online resources, predicted whether or not a respondent was likely to be willing to pay, with one exception. Respondents who said that they used online videos "to meet needs as an educator" are statistically significantly less likely to be willing to pay (N=238, chi-square value 5.672, 95% confidence).

The importance of library services in general, whether to family or to community, did not predict whether or not a respondent was likely to be willing to pay.

Personal and family characteristics (gender, education level, ethnicity, age, number of family members and income) did not predict whether or not a respondent was likely to be willing to pay.

In contrast to most respondent-specific variables, library-specific variables are able to predict whether or not respondents are willing to pay. Respondents are more likely to be willing to pay if they are coming from libraries that do not have access to OverDrive resources, spend less than \$20 per capita on library services, and have a service population below 100,000. See Table 2 for statistical output.

Variable	Chi Square Value	Confidence level
Not having access to OverDrive eBooks or eAudio	$3.654^{a} \cdot 3.173^{b}$	00%
books	5.054, 5.175	9070
Total library operating expenditures per capita are	$2.854^{a} \cdot 5.165^{c}$	05%
less than \$20	5.654 , 5.105	9370
Library service population is below 100,000	5.009 ^a ; 4.825 ^b ; 7.414 ^c	95%
^a For eBooks		
^b For eAudio books		
^c For online videos		

 Table 2: Library-specific variables that predict willingness to pay

Discussion

The findings from this study offer several contrasts to the existing literature about public library patron willingness to pay. The following sections will highlight the implications of these findings as they relate to public libraries' present and future work.

Willingness to Pay Responses

The high correlation between the willingness to pay responses for all three resources is noteworthy. People are generally willing to pay the same amount for eBooks, eAudio books and online videos. This finding could help public library administrators make collection development decisions that provide the biggest return on investment. For instance, if a cost discrepancy exists between different types of online resources, public libraries might decide to focus their financial resources upon acquiring, supporting and distributing lower-cost online resources since the value derived from all three appears to be roughly similar.

The frequency of \$0 responses should not be surprising. As David Reibstein, Professor of Marketing at the Wharton School, explains, "Once people have gotten things for free, it's hard to get them used to having to pay for it" (Wharton School, 2002). A different theory about the \$0 responses comes from research about online versus in-print news. Hal Varian, a Google economist, used data from the Google news site to see how much time people were spending with online news resources. He found that people were likely to consume little bits of news over the course of the day, and they were less likely to read for long periods of time as part of a morning routine. His explanation for people's unwillingness to pay for online news resources is that "People who click on a news article or a video at work as a distraction from other tasks aren't going to want to pay for it. People are willing to pay for newspapers not because they're used to paying [...] but because 'It's a much nicer experience to sit there with a newspaper and a cup of coffee and have that be your leisure time activity'" (Beckett, 2010). Likewise, libraries should pay attention to how their patrons are using these online resources—not only for what purposes, but in what contexts and for how long. This research on information behavior could help libraries better understand the expectations of their patrons and would be particularly important for libraries that are considering charging per-use fees for certain resources.

The frequency of \$1.00 responses could be the result of an "iTunes" or "app" effect. In many online and mobile environments, instant satisfaction is only \$.99 away. Regardless of what resource people are trying to access, they are accustomed to paying about a dollar for online and mobile resources. This theory could explain why \$1.00 was the most popular response among respondents willing to pay something for these resources. Since this study did not ask respondents to explain their responses if they were willing to pay an amount greater than \$0, more research is needed to understand why these respondents chose \$1.00.

By further analyzing the responses of the people who are willing to pay nothing, we can better understand the perspective of these respondents. The response "We don't like paying a fee to use a library resource" was selected most frequently among respondents willing to pay \$0. In the economics literature, this is known as a protest response. The respondent is protesting the hypothetical notion of the payment vehicle (in this case, a per-use fee). Some studies exclude protest responses from the analysis in order to minimize their effect upon the average willingness to pay. In this study, however, protest responses were included in the analysis because it provided a more conservative estimate of overall WTP. As Aabø (2004) demonstrated, excluding the protest responses generally results in higher WTP estimates (p. 183), which can potentially inflate the perceived value beyond real WTP. The frequency of these protest responses should indicate to library administrators that a per-use fee is often objectionable to library patrons. In this economic climate, many library administrators are looking for ways to diversify their funding, but they should consider that charging people on a per-use basis for online resources could be met with opposition.

Factors Unrelated to Willingness to Pay

The use of these online resources is not related to willingness to pay. Patrons who did not use these resources are not more or less likely to be willing to pay than patrons who did use these resources. This result may indicate that online library services hold value for patrons who choose not to use them. A comparison of users and non-users of eBooks, eAudio books and online videos revealed no remarkable differences in terms of demographics. However, this study only surveyed respondents who were already accessing some type of online resource (including databases). It is possible that if we look at patrons who are using any type of online resource and compared them to library patrons who are not using any type of online resource, we might observe some differences between these two groups. This research could be extremely valuable to public library administrators as more resources become available online because libraries

will need to make sure that their resources are still accessible to all types of people in their communities.

"Library love," or how important respondents thought library services in general were for their families and communities, is not related to willingness to pay. In previous studies (e.g., Simonsen & Robbins, 2003), a relationship between people's attitudes towards the service and their willingness to pay had been found, but in this study, no relationship could be established between the importance of services and willingness to pay. One potential explanation is that using online resources is a less personal experience than an in-person visit to the library, making respondents less likely to be influenced by their positive feelings about library services in general. Since libraries often rely on "library love" from the community to defend against budget cuts, libraries should consider that online library. As libraries change their focus to online resources, they should consider if patrons' perceptions of the library are also likely to change and, if so, what impact these changes will have upon their organizations.

Previous studies (e.g., Morris et al., 2002; Aabø, 204; Hider, 2008) have shown relationships between willingness to pay and personal and family characteristics, but this study does not follow that trend. Age, number of family members, income, education, ethnicity and gender do not predict whether or not respondents are willing to pay. The group of respondents from this study is skewed towards female, white and well-educated, however enough variation exists to adequately complete an analysis. It would be interesting to compare these respondents to a broader sample of North Carolina public library patrons to see if patrons who use online library resources are similar to users of traditional library services. The skew in respondents might also be the result of a selfselection bias. It is possible that some groups of people are more inclined to respond to surveys than others. More research is needed to determine if libraries are successfully marketing their online resources to all of their patrons, particularly since libraries will continue to increase their reliance upon online information resources.

Factors Related to Willingness to Pay

The finding that respondents who used online videos to meet their needs as educators are less likely to be willing to pay could indicate that educators think that they should not have to use their personal resources for educational materials. However, since this effect was only observed in the case of online videos, more research is needed to see if this relationship can be observed in other contexts.

The finding that people who paid for eBooks are more likely to be willing to pay was not surprising. People who are accustomed to paying for a good in the marketplace might be more inclined to pay for a substitute public good. It is worth mentioning, however, that this finding was not statistically significant for eAudio books or online videos, and more research would help libraries gain more understanding about this potential relationship between paying for a resource and WTP.

The three library specific variables are all statistically significant for predicting willingness to pay and are highly correlated. In other words, libraries with higher spending per capita are likely to have OverDrive resources and a larger service population. It is possible that people who come from larger library systems with many resources know that they are making significant financial contributions to the library through their taxes. Likewise, it is possible that people who are coming from smaller

libraries with fewer resources are aware of the limitations their libraries face, and therefore place a higher value upon the resources that are available. These findings offer encouragement for small libraries to seek out partnerships to increase their patrons' access to online resources.

Conclusion

This study measured the value of library-provided eBooks, eAudio books, and online videos to North Carolina public library patrons and investigated the relationship between respondent and library characteristics and the perceived value of these resources. Although this study provides some interesting findings for public library administrators, this study does not measure the full economic or cultural value of these resources. It only measures the monetary value that patrons assign to the hypothetical use of eBooks, eAudio books and online videos. In that sense it is a conservative estimate of the value that these resources provide to their communities. While this estimate may be useful to public library administrators, it is important to remember that libraries have more to offer their communities than a number preceded by a dollar sign. The value of preserving local history, supporting early childhood literacy and connecting communities to new technologies cannot be easily measured with monetary terms. Matthews (2011) suggests that public libraries "consider developing a new out-of-the-box [return on investment] measure that communicates the value of the library. Perhaps we should consider a return on imagination, a return on innovation, a return on ideas, a return on improvement, a return on inquisitiveness [...]" (p. 14). Alternative measures of value could provide a richer story for the benefits of libraries, but the challenge for libraries will be finding a metric that still makes a convincing argument of value to all stakeholders.

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Appendix A: List of Variables

Factor	Variable	How measured
		More than once a week
		Once a week
		More than once a month, but less
		than once a week
	Frequency of visiting library in	Once every 1-2 months
	person	Once every 3-6 months
		Once
		Not at all
		I don't know
		More than once a week
		Once a week
		More than once a month, but less
Frequency of using resources	Frequency of using online	than once a week
	library resources	Once every 1-2 months
	notary resources	Once every 3-6 months
		Once
		Not at all
		I don't know
		More than once a week
		Once a week
		More than once a month, but less
	Frequency of using a paid	than once a week
	substitute (Amazon, Netflix,	Once every 1-2 months
	iTunes)	Once every 3-6 months
		Once
		Not at all
		I don't know
		Poor
		Below average
		Average
	Selection	Above average
		Excellent
Satisfaction with online		We haven't used these
library services		I don't know
		Very easy
		Somewhat easy
	Ease of use	Somewhat difficult
		Very difficult
		We haven't used these
		I don't know
		To meet needs as a student
		For entertainment or personal
		To most poods or or oducate
Dumpaga	Durnose for using recourses	For job seerabing
rurpose	r urpose for using resources	For ourrent ich
		Other
		We don't use these
		we don t use these
		I don't know

Factor	Variable	How measured
		Not important at all
	Increase of the second second	Somewhat unimportant
	Importance of library services	Neutral
	for family	Somewhat important
General importance of		Very important
library services		Not important at all
-	T (11)	Somewhat unimportant
	Importance of library services	Neutral
	for community	Somewhat important
		Very important
		18-24
		25-34
	4 22	35-44
	Age	45-54
		55-64
		65 years and over
		Indicate number within specified
		ranges:
		0-5
		6-11
	A see and much an of family	12-17
	Ages and number of family	18-24
	members	25-34
		35-44
Personal and family		45-54
characteristics		55-64
		65 and over
		Less than \$15,000
		\$15,000-\$24,999
		\$25,000-\$34,999
		\$35,000-\$49,999
		\$50,000-\$74,999
	Income	\$75,000-\$99,999
	Income	\$100,000-\$124,999
		\$125,000-\$149,999
		\$150,000-\$199,999
		More than \$200,000
		I prefer not to answer
		I don't know
		Less than high school
		High school/GED
		Some college
		2-year college degree
		(Associate's degree)
	Education	4-year college degree
		(Bachelor's degree)
		Master's/Doctoral/Professional
		degree
		Other
		I prefer not to answer
		Male
	Gender	Female
		I prefer not to answer

Factor	Variable	How measured			
Personal and family characteristics (cont.)	Ethnicity	White or Caucasian Black or African-American American Indian or Alaskan Native Asian Native Hawaiian or other Pacific Islander Latino Other I prefer not to answer			
	Access to OverDrive resources	Yes/No (Data from OverDrive.com)			
Library-specific characteristics	Total operating expenditures per capita	Data from State Library of North Carolina			
	Legal service population	Data from State Library of North Carolina			
Value	Willingness to pay	No opinion because we don't use these \$0 \$.10 \$.25 \$50 \$1.00 \$2.00 \$5.00 >\$5.00			
	Explanation of \$0 valuation	We would like to use these, but cannot afford to pay for them We would like to use these, but prefer to spend money on other things We would get these from another service We are not interested in using these We do not like paying a fee to use a library resource We would not pay for another reason			

Appendix B: Survey (Full Text)

Public Library Online Resources Survey

Hello! I am doing research on the value of public libraries' online resources. Your opinion is very important to this research!

Your answers to this survey will be kept confidential and will in no way impact the services you receive from your public library. It should take you about 5 minutes to complete.

You do not have to take this survey, and you may stop the survey at any time. By clicking "Next" you agree to take the survey.

If you have any questions about this study you may contact me at NC LIVE (emily@nclive.org) or my research advisor, Dr. Willow Jacobson (jacobson@sog.unc.edu).

1.

Are you over 18 years old?



2.

How often (during the past 12 months) have you, or someone in your family, <u>visited your</u> <u>public library</u>?



	More than once a week	Once a week	More than once a month, o but less than once a week	Once every 1- 2 months	Once every 3- 6 months	Once	Not at all	l don't know.
Use an eBook	C	C	O	0	O	C	0	C
Use an eAudio book	0	0	0	0	O	0	0	0
View an online video	C	0	C	C	С	C	0	0

How often (during the past 12 months) have you, or someone in your family, used your <u>public library's website</u> to:

4.

If you have used eBooks, eAudio books, or online videos through your public library's website, how would you rate the <u>selection</u> of these materials?

	Poor	Below average	Average	Above average	Excellent	We haven't used these.	I don't know.
eBooks	С	C	C	C	C	C	C
eAudio books	C	C	0	C	O	O	O
Online videos	С	C	C	C	C	0	C

5.

If you have used eBooks, eAudio books, or online videos through your public library's website, how would you rate their <u>ease of use</u>?

	Very easy	Somewhat easy	Somewhat difficult	Very difficult	We haven't used these.	I don't know.
eBooks	C	0	0	C	O	C
eAudio books	0	O	0	C	0	C
Online videos	C	O	C	C	O	C

6.

How often (during the past 12 months) have you, or someone in your family, used a <u>paid</u> <u>service</u> (like Amazon, Netflix, or iTunes) for:

	More than once a week	Once a week	More than once a month, but less than	Once every 1- 2 months	Once every 3- 6 months	Once	Not at all	l don't know.
eBooks	C	C	C	C	C	С	C	C
eAudio books	O	0	C	0	0	C	0	0
Online videos	C	C	C	0	O	С	0	С

3.

Why do you, or your family, use eBooks, eAudio books and online videos, either from the library or by paying for the service? (check all that apply)

	To meet needs as a student	For entertainment or personal interests	To meet needs as an educator	For job searching	For current job	Other	We don't use these.	l don't know.
eBooks								
eAudio books								
Online videos								

The situation described on the following page is just imaginary, but please respond to the question as if it were real, keeping in mind you and your family's preferences.

Suppose that your public library could no longer afford to offer eBooks, eAudio books and online videos for free. Your public library will still offer these materials, but a small fee will be required each time you want to use them online.

8.

What is the maximum amount that you, or your family, would be willing to pay to <u>use an</u> <u>eBook through the library's website?</u>

No opinion because we don't use these.
 \$0
 \$0.10
 \$0.25
 \$0.50
 \$1.00
 \$2.00
 \$5.00
 \$5.00

7.

Which statement most closely represents the reason for your answer about eBooks?

О	We would like to use these, but <u>cannot afford</u> to pay for them.
0	We would like to use these, but prefer to spend money on other things.
0	We would get these from another service.
0	We are <u>not interested</u> in using these.
0	We <u>do not like paying a fee</u> to use a library resource.
0	We would not pay for another reason. (Please explain in space below.)
Plea	se explain:

10.

9.

What is the maximum amount that you, or your family, would be willing to pay to <u>use an</u> <u>eAudio book through the library's website?</u>



43

11.

Which statement most closely represents the reason for your answer about <u>eAudio</u> books?



12.

What is the maximum amount that you, or your family, would be willing to pay to <u>use an</u> <u>online video through the library's website?</u>



Which statement most closely represents the reason for your answer about <u>online</u> videos?



44

The following questions will help us understand more about your family. Remember that all answers are confidential.

14.

How important are public library services in general?

	Not important at all	Somewhat unimportant	Neutral	Somewhat important	Very important	l don't know.
For you and your family	0	C	C	C	С	C
For your community	0	O	O	C	C	C
15.						

What is your gender?

16.	
0	I prefer not to answer.
O	Female
O	Male

What is the highest level of education that you have completed?

0	Less than high school
0	High school/GED
0	Some college
0	2-year college degree (Associate's degree)
0	4-year college degree (Bachelor's degree)
0	Master's/Doctoral/Professional degree
O	Other
O	I prefer not to answer.

17.

How would you describe yourself? (check all that apply)

White or Caucasian
Black or African-American
American Indian or Alaskan Native
Asian
Native Hawaiian or other Pacific Islander
Latino
Other
I prefer not to answer.
18.
What is your age?

18-24 years 25-34 years 35-44 years 45-54 years 55-64 years 65 years and over I prefer not to answer. 19.

Are there others in your family?

C Yes

20.

What are the ages of the other people in your family?

If there are no other family members, you can leave the spaces blank.

	Number of family members	
0-5 years	•	
6-11 years	-	
12-17 years	•	
18-24 years	-	
25-34 years	-	
35-44 years	•	
45-54 years	-	
55-64 years	•	
65 years and over	-	

21.

What is your family's annual income?

C Less than \$15,000

\$15,000-\$24,999

Sector State St

- \$35,000-\$49,999
- \$50,000-\$74,999
- S75,000-\$99,999
- \$100,000-\$124,999
- \$125,000-\$149,999
- \$150,000-\$199,999
- O More than \$200,000
- C I prefer not to answer.
- C I don't know.

Thank you for participating in this survey! Your responses have been recorded. Click "Done" to close this window.

Appendix C: Participating Libraries

Library Name	Number of Respondents
Albemarle Regional Library	1
Appalachian Regional Library	14
Beaufort-Hyde-Martin Regional Library	4
Buncombe County Public Libraries	38
Cabarrus County Public Library	20
Catawba County Library	8
Chatham County Public Libraries	9
Cleveland County Library	3
Cumberland County Public Library	35
Davidson County Public Library	9
Davie County Public Library	4
Durham County	79
Edgecombe County Memorial Library	4
Farmville Public Library	0
Gaston-Lincoln Regional Library	26
Granville County Library	4
Greensboro Public	32
Harnett County Public Library	3
High Point Public	12
Kings Mountain/Mauney Memorial Library	0
Neuse Regional Library	3
New Hanover County Public Library	15
Public Library of Johnston County & Smithfield	8
Randolph County Public Library	5
Roanoke Rapids Public Library	3
Robeson County Public	3
Sheppard Memorial Library/Pitt County	15
Transylvania County Library	10
Union County Public	12
Wake County Public Libraries	67
Warren County Memorial Library	15
Wayne County Public Library	2
Wilson County Public Library	8
Total	471



Figure 4: Map of Participating Libraries

Appendix D: Splash Page Survey Invitation



Figure 5: Regular splash page

Figure 6: Splash page with survey invitation

