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## Assessing the impact of gender and race on earnings in the library science labor market.

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# Assessing the Impact of Gender and Race on Earnings in the Library Science Labor Market

Darren Sweeper and Steven A. Smith

Using data from the 2003 National Survey of College Graduates, this paper examines earnings in the library science labor market and assesses the impact of gender on the income attainment process. We use this cross-sectional dataset to determine if there are significant income differences between male and female library science professionals. The approach taken in this paper is to build a theoretical model of income attainment for librarians. We then discuss the methodology used to analyze the data and test the model, followed by a discussion of the results and recommendations for further research.



Library science is a dynamic field, changing rapidly as technological advances increase and the amount of information available continues to multiply. As the field changes and the structure of jobs in libraries evolve, opportunity and equity among those employed continues to take on more importance. Finding, retaining, and promoting competent professionals to manage and change with the field is a challenge the profession is confronting.<sup>1</sup> These developments illustrate the importance of issues such as fairness in attainment processes, which is why studies of career dynamics and attainment models in library science are relevant. This study will propose and test a model of earnings attainment for the library science labor market and attempt to explain the factors that have a direct impact on income. It is important to note that this study focuses

on people who work in library science and may or may not be librarians as commonly defined by the profession.

The purpose of this paper is to determine if there are significant salary differences between men and women employed in libraries in the United States. This paper is organized as follows. First, we review the relevant literature and discuss implications for our model of earnings attainment in library science. Second, we present the model and the theoretical basis for the structure and variable included. Third, we discuss the data, methodology, and analytical framework used in this study. This is followed by a discussion of the results, the limitations of this study, and implications for further research.

## Literature Review

In this section, we review the literature that explores the field of library science,

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the growth of the labor market, and the research on gender differences. We then discuss the research on salary determination in related labor markets and the factors that influence the process. These areas of research form the foundation of this study, the proposed model, and the analysis that follows.

Change in the field of library science has been driven by technological developments such as computing, automation, advances in information technology, the increase of information available, and the growth of the Internet. This has led to a growth of specialty jobs within the field, such as systems librarians, electronic resources librarians, and subject specialists.<sup>2</sup> Many argue that library science is moving away from the traditional service role to more of a consulting role, assisting and advising library users to become more self-sufficient and focusing more on digital and e-resources.<sup>3</sup> Marybeth Grimes and Paul Grimes argue that the structural changes taking place is resulting in a "shift of skills" required for librarians.<sup>4</sup>

Library science is perceived as a female-dominated profession. According to Stephanie Maatta, women comprise about 80 percent of the entire library science workforce and 74 percent of jobs in academic libraries.<sup>5</sup> As with other female-dominated professions, this has led to some negative perceptions of the field.<sup>6</sup> Some argue that librarians are perceived as less professional than other professions because of their focus on service.<sup>7</sup> Others argue that it is the result of its composition of women and its image as a feminized profession.<sup>8</sup> As it relates to salaries and earnings attainment, what is happening in library science is consistent with similar developments in other fields. For example, studies have shown that the higher the composition of women in a profession, the lower the prestige and salaries compared to similar fields dominated by men.<sup>9</sup>

There have been a number of studies over the past twenty years probing gender differences within library science.

These studies cover a diverse range of topics, from exploring the role of men in a field that is predominantly female,<sup>10</sup> to the composition of men and women in various jobs and roles within the field.<sup>11</sup> A large portion of this literature examines issues of gender equity and parity in career development and attainment,<sup>12</sup> salary and economic differences among librarians,<sup>13</sup> and opportunities for promotion into leadership positions.<sup>14</sup> Most of the recent literature on gender differences finds that the opportunity gap between men and women has narrowed significantly since the 1970s and 1980s. According to Marta Deyrup, women have made substantial gains since 1972 when they held only a small portion of leadership positions in academic libraries.<sup>15</sup> Women are now the majority of top administrators of Association of Research Libraries (ARL) institutions as well as the ARL board of directors, and they occupy most of the American Library Association's (ALA) executive board and officer positions. The salary differences have also decreased substantially, as women have almost achieved parity with their male colleagues.<sup>16</sup> Other studies have come to similar conclusions, and some have even found that female compensation exceeds that of males in many library positions.<sup>17</sup> Overall, there is agreement in the literature that gender differentials in salary and career success has decreased and continues to move in positive directions.

Few studies have examined salary differences among racial groups within library science. The ALA only began to systematically collect demographic information, including race and ethnicity, from their membership in 2003–2004.<sup>18</sup> There is increasing interest to study issues of diversity in the field, including the impact of race on earnings; however, a small number of studies examine racial differences as compared to gender differences. Mary Jo Lynch has pointed out the need for more understanding of demographic factors among the ALA membership and its importance in enabling the association

to know and be able to describe itself to others.<sup>19</sup>

A review of the library science literature reveals that most of the studies examining income and salary differences use basic comparisons of group means. In this study, we develop and test a model of earnings attainment in library science using regression analysis, which allows us to identify salary differences, if they exist, and whether or not those differences are statistically significant. The next section presents the theoretical basis for our model, followed by the presentation of the model and the results of the empirical analysis in the subsequent two sections.

### **A Theory of Earnings Attainment**

There are various theoretical perspectives concerning the operation of the labor market that are important to clarify, especially in regard to earnings attainment. These theories derive from economic and sociological research on wage differentials and can be roughly categorized into three schools of thought: (1) the status attainment/human capital perspective; (2) the occupationalist perspective; and (3) the structuralist perspective.<sup>20</sup> The status attainment and human capital perspective focuses on individual characteristics and views the labor market as an efficient allocator of wages and career outcomes. According to this point of view, if wage differentials persist after controlling for human capital factors, they are the result of market imperfections.<sup>21</sup> Human capital theory derives from neoclassical economics and status attainment theory from sociology.<sup>22</sup> Both assume work structures are constant and not necessary to explain labor market processes. According to Gary Becker, activities that influence future monetary and psychic income by increasing resources in people are called investments in human capital.<sup>23</sup> These resources include factors such as education, training, work experience, and other factors that would make an individual more attractive and employable to prospective employers. As with neoclassical

economic theory, these models assume perfect mobility, which implies the absence of noneconomic barriers such as discrimination.<sup>24</sup> This approach to labor market analysis usually requires the development of earnings attainment models that include quantifiable human capital variables hypothesized to influence the determination of wages.

The occupationalist perspective contends that significant earnings differentials are due to segregation of jobs based on irrelevant characteristics such as gender and race.<sup>25</sup> Occupationalists focus on both individual and occupational factors to explain differences in wages. They argue that certain occupations, especially low-paying ones with dead-end career paths and limited opportunities, are disproportionately staffed by women and minorities. An example of this view is dual labor market theory, which maintains that jobs in the labor market can be roughly divided into two categories: primary and secondary jobs.<sup>26</sup> Primary jobs are those in the upper or elite stratum of the labor market and are described as having high wages, good working conditions, and opportunities for advancement. Secondary jobs are considered to be low-paying with poor working conditions and little or no opportunities for advancement.

There are various perspectives within the structuralist school of thought. The common theme is the emphasis on the demand side of the labor market and the role that organizations, industries, and labor markets play in the allocation of jobs and wages. Structuralists argue that emphasis only on supply-side characteristics such as human capital factors fail to recognize the influence of demand-side factors such as organizational structures, industry dynamics, labor market, and institutional variables. Therefore, they focus on firm, industry, environmental, and individual characteristics in research on earnings attainment in an attempt to develop multivariate models of work and labor market processes.<sup>27</sup>

All three perspectives focus on the individual as the unit of analysis. The key difference between occupationalist/structuralist theories and human capital/status attainment theory is the emphasis on social constraints in individual mobility in the labor market.<sup>28</sup> Occupational and structural theories stress the concept of embeddedness of labor market behavior in social networks and demographic constraints,<sup>29</sup> whereas human capital and status attainment theories emphasize the role of the individual, whose behavior is viewed as being independent of current and historically exogenous influences.<sup>30</sup> The extensive research in this area has confirmed that the inclusion of multi-level, multifactor variables explains more variance in wage determination models than models based only on individual-level factors.<sup>31</sup> In this study, a multivariate structural model of earnings attainment is developed and tested for those employed in the library science labor market in the United States. The objective is to determine their attainment profiles and whether or not the process is influenced by demographic factors such as gender, race, and ethnicity.

### The Model of Earnings Attainment in Library Science

Most of the current research on earnings across professions and labor markets are based on multivariate models built to consider the influence of multiple categories of variables. Building on the theories presented in the previous section, the three categories of variables included in this study are as follows: 1) individual factors; 2) job/occupational factors; and 3) labor market factors. Each category is believed to contribute to the earnings process in library science. Marybeth Grimes and Paul Grimes used similar categories in their recent study of the role of education in the labor market for academic librarians.<sup>32</sup> This multivariate perspective takes into account the complex nature of labor markets and the fact that many factors, economic and noneconomic, contribute to

economic outcomes.<sup>33</sup> We assume that the natural log of earnings can be described as follows:

[1]  $Ln [\text{Earnings}] = \text{function} (I, J, L)$   
 where the dependent variable is the natural log of earnings, and I, J, and L represent individual, job, and labor market characteristics, respectively. Equation [2] presents a form of the model that includes the coefficients for each category of variables:

$$[2] LN [\text{EARNINGS}] = \sum B_i * \text{INDIVIDUAL CHARACTERISTICS} + \sum B_j * \text{JOB/ORGANIZATIONAL CHARACTERISTICS} + \sum B_k * \text{LABOR MARKET FACTORS}$$

The model of earnings attainment maintains that the natural log of earnings is a function of three groups of variables, and  $B_i$ ,  $B_j$ , and  $B_k$  represent the coefficients for each category. Deborah Lee proposed a similar wage model in her study of academic libraries.<sup>34</sup> She divided the variables into three categories: library/organizational, institutional, and regional. Individual variables were not included in her study because they were not available in the data. Our study is unique in library science because of the availability of individual variables, including background and human capital variables, in addition to organizational and labor market factors.

In much of the research on earnings, individual characteristics such as gender, race, ethnicity, citizenship, marital status, age, age-squared, and number of children have been shown to impact earnings and are consistently included in the models of attainment.<sup>35</sup> Age-squared is included in these models to account for the curvilinear relationship between age and earnings. Since the objective of this study is to assess the impact of gender and race on earnings, it is critical that we include all of these factors in the model, including age-squared. In addition to background and demographic variables, the impact of human capital variables on earnings have been illustrated in the research literature.<sup>36</sup> Education level is consistently proven to be the human capital variable

with the most important impact on income and career attainment, especially in professional segments of the U.S. labor market.<sup>37</sup> In this study, education is measured by the highest degree attained.

The next category of variables included in our model is job/organizational factors. We have included whether one is a supervisor or manager, if one is a member of a professional organization or society, and if he or she has attended professional meetings. These variables are not exhaustive, but they do provide insight into job responsibilities and internal library policies, such as support for specialized training and participation in professional activities.<sup>38</sup> Labor market factors included in the model are sector of employment (educational, government, self-employment, and nonprofit sector compared to for-profit sector), and geographic region.<sup>39</sup> The next section presents the data and methodology used to test the model.

### Data and Methodology

The source of data for this study is the 2003 National Survey of College Graduates (NSCG). It is a longitudinal survey administered by the Bureau of the Census for the National Science Foundation. It is a rich dataset with demographic and employment information for more than 100,000 college graduates with a baccalaureate degree or higher in 2003. The NSCG provides important information about the education and career paths of the country's college graduates. It also provides valuable data on the characteristics of people in the workforce such as salaries, whether the college-educated population was working in their field of study, specific occupations, sector of employment, employment status, professional training, and a gender and racial breakdown of those employed in the workforce with a college education. The 2003 NSCG provides a wealth of information covering several different topics related to career attainment and labor market dynamics.

The sample for this study consists of 357 college graduates working in library

science. We chose not to distinguish between employment in academic, public, private, and/or special libraries due to the small sample size of those working in the field and the number of variables in the proposed model of attainment; however, we do distinguish between sectors of employment in the overall economy (that is to say, government, profit, non-profit, and the self-employment sectors). One of the limitations in using secondary data, such as the NSCG and other government-sponsored surveys, is that we have to work with the variables recorded and the data collected by the principal researchers. One of the challenges we faced using the NSCG is that those employed in library science may not all be considered librarians as commonly defined by the profession. Our sample includes individuals that have identified themselves as librarians or working in the library science field, although they may not hold a Master of Library Science degree. Although this is a small sample, the 2003 NSCG provides one of the few sources of detailed information on library science professionals at all degree levels in the United States. Our sample of 357 includes those working in library science with positive income during the month of October 2003, with a baccalaureate degree or higher, and living in the United States. The tables below provide descriptive statistics of our sample. The variables in the model of earnings attainment are reported in table 1 along with their specification and overall sample mean. The dependent variable is the natural log of earnings, a continuous variable, and the independent variables are a combination of dichotomous, categorical, and continuous variables. For the dependent variable, we have included the mean of 10.40 along with the mean of earnings itself, which is \$42,067.79. The sample mean of each of the dichotomous independent variables is the percentage of the overall sample with that respective characteristic. The variables representing the number of children present the average number of

**TABLE 1**  
**Definition and Full-Sample Means for Variables Used in Model of Earnings Attainment**

Variable	Specification	Mean (Standard Deviation)
<i>Dependent Variable</i>		
Earnings	Annual Salary in 2003	\$42,067.79 (23,457.30)
Ln [Earnings]	Natural Log of Salary in 2003	10.40 (0.89)
<i>Individual Variables</i>		
Female	Female = 1    Otherwise = 0	0.76 (0.43)
White	White = 1    Otherwise = 0	0.85 (0.35)
Black	Black = 1    Otherwise = 0	0.08 (0.27)
Hispanic	Hispanic Heritage = 1    Otherwise = 0	0.05 (0.23)
Asian	Asian = 1    Otherwise = 0	0.06 (0.25)
Native American	Native American = 1    Otherwise = 0	0.02 (0.15)
Age	Age as of October 2003	49.46 (10.38)
Married	Married    Yes = 1    Otherwise = 0	0.68 (0.47)
# of Children under 2	Number of Children under 2 years old in 2003	0.034 (0.209)
# of Children 2 to 5	Number of Children between 2 and 5 years old	0.045 (0.220)
# of Children 6 to 11	Number of Children between 6 and 11 years old	0.157 (0.569)
# of Children 12 to 18	Number of Children between 12 and 18 years old	0.230 (0.538)
# of Children 19 or Older	Number of Children 19 years old or Older	0.165 (0.466)
Foreign-Born	Born outside U.S. = 1    Otherwise = 0	0.12 (0.33)
Bachelors Degree	Highest Degree Attained Bachelors = 1    Otherwise = 0	0.26 (0.44)
Masters Degree	Highest Degree Attained Masters = 1    Otherwise = 0	0.67 (0.47)
Professional Degree*	Highest Degree Attained Professional Degree = 1    Otherwise = 0	0.03 (0.17)
Ph.D. Degree	Highest Degree Attained Ph.D. = 1    Otherwise = 0	0.04 (0.21)
<i>Job/Organizational Variables</i>		
Supervisor	Did you supervise the work of others as part of your principle job responsibilities? Yes = 1    No = 0	0.52 (0.50)
Attends Prof. Meetings	During the past year, did you attend any professional society or association meetings or conferences? Yes = 1    No = 0	0.71 (0.45)

<b>TABLE 1 (CONTINUED)</b>		
<b>Definition and Full-Sample Means for Variables Used in Model of Earnings Attainment</b>		
<b>Variable</b>	<b>Specification</b>	<b>Mean (Standard Deviation)</b>
# of Professional Societies	Number of Professional Society Memberships	1.78 (1.68)
<i>Labor Market Variables</i>		
Education Sector	Education Sector Yes = 1    No = 0	0.48 (0.50)
Government Sector	Government Sector Yes = 1    No = 0	0.32 (0.47)
Profit Sector	Profit Sector Yes = 1    No = 0	0.09 (0.28)
Non-Profit Sector	Non-Profit Sector Yes = 1    No = 0	0.10 (0.30)
Self-Employed	Self-Employed Yes = 1    No = 0	0.006 (0.075)
North East U.S.	Employer Region in U.S. North East = 1    Otherwise = 0	0.22 (0.41)
North Central U.S.	Employer Region in U.S. North Central = 1    Otherwise = 0	0.23 (0.42)
South Central U.S.	Employer Region in U.S. South Central = 1    Otherwise = 0	0.13 (0.34)
South East U.S.	Employer Region in U.S. South East = 1    Otherwise = 0	0.20 (0.40)
Mountain Region	Employer Region in U.S. Mountain Region = 1    Otherwise = 0	0.08 (0.27)
Pacific Region	Employer Region in U.S. Pacific Region = 1    Otherwise = 0	0.14 (0.35)

children for those with children within the age-group category.

Among the independent variables, the table shows that our sample is representative of the demographic makeup of library science based on previous surveys and articles.<sup>40</sup> Our sample is 76 percent female, 85 percent white, 8 percent black, 5 percent Hispanic, 6 percent Asian, and 2 percent Native American; additionally, 12 percent of the sample is foreign-born. The average age of our sample is 49.5 years and 68 percent were married. Most (67%) possess a master's degree, and 52 percent supervised the work of others. A large majority (71%) of our sample attended

at least one professional meeting within a one-year period and were members of roughly 2 professional societies or associations. Among our labor market variables, the largest group was employed in the education sector (48%) followed by the government sector (32%). The sample was almost evenly distributed across the United States, with the largest number (23%) employed in the North Central region of the country and the smallest (8%) in the Mountain states.

Table 2 presents the education level of those employed by race, ethnicity, and gender, while table 3 presents annual mean income by the same factors.



**TABLE 2**  
**Education Level by Gender and Race/Ethnic Group**

Category	Bachelor Degree	Masters Degree	Prof. Degree	Ph.D. Degree	Total	Percent
Female	74	180	10	9	273	76.5%
Male	18	58	1	7	84	23.5%
White	79	202	10	14	306	85.5%
Black	6	18	0	3	27	7.5%
Hispanic	10	9	0	0	19	5.3%
Asian	6	16	0	1	23	6.4%
Native American	3	4	1	0	8	2.2%

These tables show differences between the groups by degree and mean salary. However, it is the next section that will examine whether these differences are significant, controlling for all of the variables in our model. The most common method used to estimate models of earnings attainment is ordinary least squares (OLS) regression, which is employed in this study. The following section provides the empirical results of our analysis.

**Analysis and Findings**

OLS regression estimates of how individual, job/occupational, and labor market factors affect earnings in library science are presented in table 4. The estimation of the model yields an adjusted r-squared of 0.250 and a set of statistically significant variables. However, as we examine the

impact of gender, race, and ethnicity on earnings, the major finding of our analysis is that there is no significant difference in earnings between women and men or between racial and ethnic groups. The coefficient of the female variable is statistically insignificant, as are the coefficients representing the racial and ethnic groups. In other words, when controlling for all of the variables in the model, gender and racial factors do not have any impact on earnings attainment in library science. It is worth noting that the coefficients on the female, black, Asian, Hispanic, Native American, and foreign-born variables are all negative; nevertheless, they have been shown to be insignificant.

The two demographic variables that are significant are age and age-squared. The coefficient of the age variable (0.104) is positive and significant ( $p < 0.05$ ), whereas the coefficient of age-squared (-0.001) is negative and significant ( $p < 0.001$ ). We know that the impact of age on earnings is not linear. The overall impact is a combination of both the age and age-squared variable. The combined impact, all else being equal, is as follows:

$$[3] \text{ Earnings} = Ba * (\text{age}) - Baa * (\text{age-squared})$$

where  $Ba$  is the coefficient of age and  $Baa$  is the coefficient of age-squared. This means that the impact on earning depends on the individual's age, which would be plugged into the equation.

**TABLE 3**  
**Mean Annual Earnings by Gender and Race/Ethnic Group**

Gender/Race/Ethnicity	Mean	Standard Deviation
Female	\$40,127.49	21,337.19
Male	\$48,373.77	28,556.47
White	\$42,674.17	24,053.28
Black	\$38,025.04	20,634.02
Hispanic	\$32,245.84	14,016.93
Asian	\$35,962.00	19,069.32
Native American	\$41,072.38	23,529.71

<b>TABLE 4</b>		
<b>Regression Results</b>		
Dependent Variable: <b>Log Earnings</b> (N = 357)		
[*p < 0.1, **p < .05, ***p < .01, ****p < .001]		
<b>Variables</b>	<b>Coefficients</b>	<b>Standard Error</b>
<b>Individual Factors</b>		
Black	-0.180	0.164
Asian	-0.069	0.193
Hispanic	-0.226	0.196
Native American	0.018	0.288
Foreign Born	-0.028	0.146
Female	-0.094	0.103
Age	0.104***	0.032
Age Squared	-0.001****	0.000
Married	0.055	0.097
# of Children under 2	0.053	0.213
# of Children 2 to 5	-0.223	0.198
# of Children 6 to 11	-0.018	0.075
# of Children 12 to 18	-0.199**	0.075
# of Children 19 or Older	0.098	0.096
Masters Degree	0.305***	0.106
Professional Degree	0.185	0.258
Ph.D. Degree	0.441**	0.225
<b>Job/Occupational Factors</b>		
Number of Professional Societies	0.016	0.031
Professional Meetings Attended	0.343***	0.113
Supervisor	0.437****	0.091
<b>Labor Market Factors</b>		
Education Sector	-0.368**	0.169
Government Sector	-0.333**	0.169
Non-Profit Sector	-0.434**	0.206
Self-Employed	-1.057*	0.593
South East U.S.	0.098	0.130
North Central U.S.	-0.238*	0.127
South Central U.S.	-0.277*	0.153
Mountain Region	-0.168	0.171
Pacific Region	-0.004	0.149
Constant	7.887	0.767
<b>Adj. R-Square</b>	<b>0.250</b>	

Notes: The omitted variables are white, bachelor's degree, profit sector, and Northeast region.

In our results,  $Baa$  is (0.104) and  $Baa$  is (-0.001); therefore, we estimate that:

[4]  $Earnings = 0.104 * (age) - 0.001 * (age-squared)$

To determine the percentage impact on earnings, we take the derivative of equation [4]:

[5]  $d (earnings)/d (age) = 0.104 - 0.002 * (age)$

Table 1 reports the mean of age for our sample as 49.46 years. If we plug this mean into equation [5], we can assume that the mean impact of age on earnings in the library science labor market is

[6]  $0.104 - 0.002 * (49.46) = 0.005$

This translates to a 0.50 percent increase in earnings per year. In other words, a one-year increase in age leads to a 0.50 percent increase in salary, all else being equal. Age can also be considered a close approximation of years of work experience, as the two variables are usually highly correlated; therefore, the increase in salary per additional year of age may also be capturing some of the impact of an additional year of work experience.

The next variable that is significant is one of the "family" variables. Having children between the ages of 12 and 18 has a negative (-0.199) and significant ( $p < 0.05$ ) impact on earnings. Of the remaining individual-level variables in the model, master's and Ph.D. degree are the only ones that are significant. The coefficient of master's degree (0.305) is significant at the 0.001 level and can be interpreted as follows: having a master's increases earnings by 30.5 percent, compared to those with a bachelor's degree, net all of the other factors in the model. Having a Ph.D. is significant at the 0.05 level and translates into an increase of 44.1 percent in earnings.

As we assess the job and occupational variables, attending professional meetings is highly significant at the 0.001 level and leads to a net increase in earnings of 34.3 percent. Supervising the work of others is also significant at the 0.001 level and increases earnings, net of the other variables in the model, by 43.7 percent. These findings illustrate the importance of

including job and occupational variables in the model and their importance on the earnings attainment process. It confirms that job advancement and taking on the managerial responsibility of supervising the work of others, in addition to being active in the field by attending professional meetings, which most likely involves networking with colleagues, has a very positive and significant impact on an individual's career in library science.

Labor market factors are also shown to be important. Working in the education, government, and nonprofit sector, or being self-employed, decreases earnings compared to working in the for-profit sector. The education, government, and nonprofit variables are significant at the 0.05 level, and the self-employed variable is significant at the 0.10 level. In addition to sector of employment, region of employment also plays an important role in earnings attainment. Our results indicate that being employed in the North Central and South Central region of the United States decreases earnings relative to being employed in the Northeast. The coefficients on both variables are negative and significant at the 0.10 level.

Overall, the key findings of the analysis are: 1) there is no significant difference in earnings between men and women or between blacks, Asians, Hispanics, and Native Americans as compared to whites; 2) age is significant and positively impacts earnings; 3) education is key: possessing a master's degree and/or a Ph.D. is extremely important and positively impacts earnings; 4) being active in the job in the form of taking on a supervisory role is significant and positively impacts earnings; 5) being active in the profession by attending meetings and conferences is significant and positively impacts earnings; and 6) sector and region of employment significantly impacts earnings.

## Conclusion

Our assessment of the impact of gender, race, and ethnicity on earnings in library science found no significant differences between men and women or between ra-

cial and ethnic groups. Although it may be surprising, these findings are consistent with Lester Thurow's theory of job competition in the high-skilled segment of the labor market.<sup>41</sup> He argues that, once these highly competitive positions are successfully secured, individual background characteristics should be irrelevant and superseded by human capital factors. These results may be counterintuitive and not consistent with many assumptions held by researchers studying this topic for years; however, they represent a positive development for the profession and one that proves that human capital, job/occupational and labor market factors are the most important determinants of earnings. Recognizing the ever-critical need to recruit and retain highly qualified professionals of all backgrounds into the field, these results should provide some comfort to those charged with encouraging students and other professionals to consider library science as a career. These results also illustrate that, in a field that is disproportionately white and female, men and members of minority groups are not facing significant discrimination in the earnings attainment process.

Although the results of this study are based on a sample of just 357 professionals working in library science, they form the basis for continued work in this area.

We are well aware of the limitations of the study. As we built the model of earnings attainment, we were limited by preexisting variables in the National Survey of College Graduates. We also faced the problem of a small sample size and limitations in the generalizability of the results. For example, do these results apply to the field overall or to specific segments such as academic libraries or public libraries? It is difficult to answer these questions without further study and new and larger datasets. However, it is important to note that empirical studies of earnings in library science are few, and one hopes that this study will lead to more work in this area. Possibilities for future research should include further examination of the impact of gender, race, and ethnicity on earnings and other attainment processes within the field, such as hiring, promotion, and access to managerial jobs. Another area for future research stemming from the results of this study should be a more in-depth examination of the relationship between networking, mentoring, and memberships in professional organizations on earnings and overall career success. This study illustrates that these factors are significant, impact the earnings attainment process, and could lead to a deeper understanding of the internal workings of the field of library science.

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## Notes

1. Kyung-Sun Kim, Ming-Hsin Chiu, Sei-Ching Joanna Sin, and Louise Robbins, "Recruiting a Diverse Workforce for Academic/Research Librarianship: Career Decisions of Subject Specialists and Librarians of Color," *College & Research Libraries* 68 (2007): 533-52; Scott Seaman, "Salary Compression in the Association of Research Libraries," *Libraries and the Academy* 5, no. 1 (2005): 77-91.

2. Barbara J. Bergman, "Looking at Electronic Resources Librarians: Is There Gender Equity within This Emerging Specialty?" *New Library World* 106 (2005): 116-27.; Zahiruddin Churched, "The Impact of Information Technology on Job Requirements and Qualifications for Catalogers," *Information Technology and Libraries* 21 (2003): 18-21; Mack Lundy, "Changing Roles of the Systems Librarians at the College of William and Mary: The Explosion of Technology and Position of the System Librarian," *Library Hi Tech* 21 (2003): 333-39; Linda L. Scarth, "Are We There Yet? Facing the Never-Ending Speed and Chance of Technology in Midlife," *Library Trends* 50 (2002): 681-86.

3. Bergman, "Looking at Electronic Resources Librarians," 124; Dolores Fidishun, "People Servers vs. Information Providers: The Impact of Service Orientation on Technology Training," *Information and Technology Libraries* 20 (2001): 29-34.

4. Marybeth F. Grimes and Paul W. Grimes, "The Academic Librarian Labor Market and the Role of the Master of Library Science Degree: 1975 through 2005," *Journal of Academic Librarianship* 34 (2008): 332-39.

5. Stephanie Maatta, "What's an MLIS Worth?" *Library Journal* 132 (2007): 30-38.

6. Steven A. Smith, Sandra Hartman, and Steven Crow, "Attrition in Nursing: Perspectives from the National Survey of College Graduates," *Health Care Manager* 24, no. 4 (Sept.–Dec. 2005): 336–46.
7. Bergman, "Looking at Electronic Resources Librarians," 117.
8. Paul Piper and Barbara E. Collamer, "Male Librarians: Men in a Feminized Profession," *Journal of Academic Librarianship* 27 (2001): 406–11.
9. John W. Graham and Steven A. Smith, "Gender Differences in Employment and Earnings in Science and Engineering in the U.S.," *Economics of Education Review* 24 (2005): 341–54.
10. Joanne E. Passet, "Men in a Feminized Profession: The Male Librarian, 1889–1921," *Libraries & Culture* 26 (1993): 385–402; James V. Carmichael, "The Male Librarian and the Feminine Image: A Survey of Stereotype, Status, and Gender Perceptions," *LISR* 14 (1992): 411–46; Piper and Collamer, "Male Librarians: Men in a Feminized Profession," 409.
11. Marybeth F. Charters and Paul W. Grimes, "Technology and Librarianship: A Test of the Human Capital Model of Occupational Segregation," *Applied Economic Letters* 4 (1997): 403–06; Suzanne Hildenbrand, "The Information Age vs. Gender Equity," *Library Journal* (Apr. 15, 1999): 44–47.
12. Roma M. Harris and Jean M. Tague, "Reaching the Top in Canadian Librarianship: A Biographical Study of Sex Differences in Career Development," *Library Quarterly* 59 (1989): 116–30.
13. Linda Ashcroft, "Raising Issues of Salaries and Status for Library/Information Professionals," *New Library World* 104 (2003): 164–70; Herbert C. Carson, "Beginner's Luck: A Growing Job Market," *Library Journal* 121 (1996) 29–35; Maatta, "What's an MLIS Worth?" 30; Mickey Zemon and Alice Harrison Bahr, "Career and/or Children: Do Female Academic Librarians Pay a Price for Motherhood," *College & Research Libraries* 66 (2005): 394–406.
14. Marta M. Deyrup, "Is the Revolution Over? Gender, Economic, and Professional Parity in Academic Library Leadership Positions," *College & Research Libraries* 65 (2004): 242–50; Betty J. Turock, "Developing Diverse Professional Leaders," *New Library World* 104 (2003): 491–99.
15. Deyrup, "Is the Revolution Over?" 243.
16. *Ibid.*
17. Zemon and Bahr, "Career and/or Children," 394.
18. Mary Jo Lynch, "Association, Know Thyself," *American Libraries* (Dec. 2003): 76–77.
19. *Ibid.*
20. Ellen R. Auster, "Task Characteristics as a Bridge Between Macro- and Micro-Level Research on Salary Inequality Between Men and Women," *Academy of Management Review* 14 (1989): 173–93; Steven A. Smith, "Assessing the Impact of Race and Nativity on the Careers of Scientists and Engineers: An Analysis of Selection and Attainment Processes in the Scientific Labor Market" (Ph.D. diss., Rutgers University, 1997).
21. Auster, "Task Characteristics as a Bridge," 173; Gary S. Becker, *Human Capital*. (New York: National Bureau of Economic Research, 1964).
22. Auster, "Task Characteristics as a Bridge," 173; Peter Blau and Otis D. Duncan, *The American Occupational Structure* (New York: Wiley, 1967); Robert M. Hauser, "On Stratification in a Dual Economy," *American Sociological Review* 45 (1980) 702–12.
23. Becker, *Human Capital*.
24. James J. Beggs, "The Institutional Environment: Implications for Race and Gender Inequality in the U.S. Labor Market," *American Sociological Review* 60 (1995): 612–33.
25. James N. Baron, "Organizational Evidence of Ascription in Labor Markets," eds. Robert R. Cornwall and Phanindra V. Wunnava, *New Approaches to Economic and Social Analysis of Discrimination* (New York: Praeger, 1991): 113–44; William T. Bielby, "The Structure and Process of Sex Segregation," eds. Robert R. Cornwall and Phanindra V. Wunnava, *New Approaches to Economic and Social Analysis of Discrimination* (New York: Praeger, 1991), 97–112.
26. Robert T. Averitt, *The Dual Economy: The Dynamics of American Industry Structure* (New York: Norton, 1968); Barry Bluestone, William M. Murphy, and Mary Stevenson, *Low Wages and the Working Poor* (University of Michigan-Wayne State University: Institute of Labor and Industrial Relations, 1973); Peter B. Doeringer and Michael J. Piore, *Internal Labor Markets and Manpower Analysis* (Lexington, Mass.: Heath, 1971).
27. James N. Baron and William T. Bielby, "Bringing the Firms Back In: Stratification, Segmentation, and the Organization of Work," *American Sociological Review* 45 (1980): 737–65; Mark Granovetter, "Towards a Sociological Theory of Income Differences," ed. Ivar Berg, *Sociological Perspectives on Labor Markets* (New York: Academic Press, 1981), 11–48; Arne Kalleberg, Michael Wallace, and Robert Althauser, "Economic Segmentation, Worker Power, and Income Inequality," *American Journal of Sociology* 87 (1981): 651–83.
28. Mark Granovetter, "The Sociological and Economic Approaches to Labor Market Analysis: A Structural View," eds. Mark Granovetter & Richard Swedberg, *The Sociology of Economic Life* (Boulder, Colo.: Westview Press, 1992) 233–63.

29. Mark Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology* 91 (1985): 481-520; Granovetter, "The Sociological and Economic Approaches to Labor Market Analysis," 233; Alejandro Portes and Julia Sensenbrenner, "Embeddedness and Immigration: Notes on the Social Determinants of Economic Action," *American Journal of Sociology* 98 (1993):1320-50.
30. Becker, *Human Capital*.
31. Smith, "Assessing the Impact of Race."
32. Grimes and Grimes, "The Academic Librarian Labor Market," 337.
33. Baron & Bielby, "Bringing the Firms Back In," 739.
34. Deborah Lee, "Faculty Status, Tenure, and Compensating Wage Differentials," Ph.D. diss., Mississippi State University, 2005
35. Graham and Smith, "Gender Differences in Employment," 341; Grimes and Grimes, "The Academic Librarian Labor Market," 337; Allen L. Webster, "Demographic Factors Affecting Faculty Salary," *Educational and Psychological Measurement* 55 (1995): 728-35; Michael R. Ransom, "Seniority and Monopsony in the Academic Labor Market," *The American Economic Review* 83 (1993): 221-33; Jeffrey Pfeffer and Alison Davis-Blake, "Determinants of Salary Dispersion in Organizations," *Industrial Relations* 29 (1990): 38-57.
36. Becker, *Human Capital*; Debra A. Barbezat, "From Here to Seniority: The Effects of Job Tenure on Faculty Salaries," *New Directions for Institutional Research* 117 (2003) 21-47; Granovetter, "Towards a Sociological Theory of Income Differences," 11.
37. Scott R. Eliason, "An Extension of the Sorenson-Kalleberg Theory of the Labor Market Matching and Attainment Process," *American Sociological Review* 60 (1995): 247-71.
38. Celia A. Allard, "Assessing Faculty Salary Equity," *AIR Professional File* 20 (1984): 1-9; Grimes and Grimes, "The Academic Librarian Labor Market," 337.
39. Graham and Smith, "Gender Differences in Employment and Earnings," 341.
40. Kim, Chiu, Sin, and Robbins, "Recruiting a Diverse Workforce," 539; Lynch, "Association, Know Thyself," 76; Mary Jo Lynch, "Librarians' Salaries: Smaller Increases This Year," *American Libraries* 29 (1998): 66-70.
41. Lester C. Thurow, *Generating Inequality: Mechanisms of Distribution in the U.S. Economy* (New York: Basic Books, 1975).



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