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Job Satisfaction of Information Technology Workers in Academic Libraries

Sook Lim, *St. Catherine University*

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Sook Lim

Library and Information Science, The College of St. Catherine
2004 Randolph Ave. #4125, St. Paul, MN 55105, USA
E-mail address: slim@stkate.edu

Abstract

This study examines the job satisfaction of library information technology (IT) workers in relation to demographic and socioeconomic variables, and work-related variables, such as a sense of belonging, faith in wanting to belong, a feeling of acceptance, paying dues, job autonomy, the broker's role, and promotion opportunities. A total of 443 mail surveys were sent to the sample of IT workers of 30 university libraries among the 99 university member libraries of Association of Research Libraries in the United States. A total of 202 surveys were returned, resulting in a 45.6% response rate. This study found that salary, an MLS degree, a sense of belonging, faith in wanting to belong, a feeling of acceptance, job autonomy and promotion opportunities were related to job satisfaction of the library IT workers. This study provides some explanations as to why some IT workers are more satisfied with their jobs than others, thereby contributing to improving the quality of their work lives.

1. Introduction

Job satisfaction has been of interest to organizational researchers, due to its relationships with job performance and/or organizational commitment (Christen, Lyer, & Soberman, 2006; Cohrs, Abele, & Dette, 2006; Rayton, 2006). More importantly, employed individuals spend most of their time doing their jobs. As a result, individuals' feelings about their jobs are likely to affect those impacting their lives in general. In fact, Judge & Watanabe's (1994) literature review and their study support this view by showing a positive relationship between job and life satisfaction. Similarly, Landry (2000) also found a positive correlation between life and job satisfaction of librarians in public libraries. Furthermore, according to Judge & Llies, (2004), job satisfaction affects

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one's positive mood after working. In turn, job satisfaction is important regarding personal well-being and organizational effectiveness.

Due to this merit of the topic, some library and information science (LIS) researchers have also examined library employees' job satisfaction. However, few empirical studies exist regarding the job satisfaction of library Information Technology (IT) workers, despite the growth of IT workers in academic libraries. Currently, it seems that only two relevant studies exist (Lim, 2007; Taylor, 2000). Taylor (2000) examined the job satisfaction of webmasters from the Association of Research Libraries (ARL) in relation to their job tasks, including likes and dislikes regarding their specific tasks. One the other hand, Lim (2007) examined the job satisfaction of IT workers of ARL member libraries in relation to the MLS (Master of Library Science) degree.

Both studies provide some knowledge concerning the job satisfaction of employees working with IT in academic library settings. However, it is not well known as to which factors contribute to the job satisfaction of library IT workers. As a result, further research is required regarding which factors affect the job satisfaction of library IT workers. Here, the term, *library IT workers* refers to those dealing with integrated library systems management, network management and administration or other computer applications.

In particular, the study examine library IT workers' job satisfaction in relation to their background (i.e., demographic and socioeconomic) variables, and particular work-related variables. These background variables include: gender, race, age, education, years worked in library and salary. The work-related variables include a sense of belonging,

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faith in wanting to belong, a feeling of acceptance, paying dues, job autonomy; the job role (broker's role), and promotion opportunities.

This study contributes to both the LIS literature and practice in the following ways: first, this study provides new knowledge concerning the job satisfaction factors of IT workers. In other words, this study provides some explanations as to why some IT workers are more satisfied with their jobs than others, thereby contributing to improving the quality of their work lives. Second, the new knowledge may help library managers develop effective management approaches.

2. Literature review

There exists an extensive body of the literature related to job satisfaction. This literature review is not comprehensive, but is rather limited to the areas concerning the job satisfaction of IT workers and library employees, and the job satisfaction of other types of employees in various organizational settings. First, I will review a few definitions of *job satisfaction* and certain arguments in defining the concept. Second, I will identify specific important factors affecting job satisfaction in the literature, from which I will draw my research hypotheses.

2.1. Definitions of job satisfaction and specific arguments defining the concept

Edwin Locke's (1976) classic definition of job satisfaction has been widely cited in the literature. Locke defines job satisfaction as "*a pleasurable or positive emotional state resulting from an appraisal of one's job or job experiences*" (p. 1300). Similarly, Hackman & Oldham (1975) provide an implicit definition of job satisfaction as one's affective reactions to his/her job in their Job Characteristics Model. Both definitions are

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essentially the same, indicating that job satisfaction is one's "*emotional reactions*" to one's job.

On the other hand, pointing out inconsistent treatments of job satisfaction as *affect* and job satisfaction as *attitude* in the literature, Weiss (2002) argues that affect and attitude are not the same thing. He further argues that the three constructs of an evaluative judgment regarding jobs, affective experiences at work and beliefs about jobs need to be distinguished. To Weiss, job satisfaction is not an affective reaction, but rather is an attitude that is an evaluative judgment involving objects. Based on his argument, Weiss defines job satisfaction as "a positive (or negative) evaluative judgment one makes about one's job or job situation" (p. 175). Currently, it seems that some researchers tend to agree with Weiss's distinction between affect and attitude in defining job satisfaction (Llies & Judge, 2004; Schleicher & Watt, 2004). In particular, acknowledging Weiss's argument, Llies & Judge (2004) remark that job satisfaction is also an attitudinal concept reflecting one's evaluation about one's job, as well as, an emotional reaction to it.

Finally, it is useful to examine how researchers measure the concept of job satisfaction, as operational definitions or similar types of definitions using these measures are often discussed as a definition of job satisfaction in the literature (e.g., Goetting, 2004; Thornton, 2000). Hackman & Oldham (1975) provide operational definitions (measures) of job satisfaction. Their measures include: overall satisfaction about the job; one's self-motivation in doing the job; and one's specific satisfaction about job security, pay and other compensation, peers and co-workers, relationship with one's supervisor and opportunities for personal growth. These kinds of operational definitions of job satisfaction reflect the various aspects or dimensions of job satisfaction. Some researchers,

however, criticize the practice of defining the concept of job satisfaction by using researcher's measures, in that such a definition evades the basic question of what *the meaning of job satisfaction* is (Locke, 1976). Additionally, such a definition adds to confusion in defining job satisfaction as an attitude (Weiss, 2002). I tend to agree with Locke's (1976) argument. However, in this paper, it is not my intention to engage in this argument. Instead, I would like to mention this argument in order to point out two things: First, there exist disagreements regarding the definition of the concept of job satisfaction. Second, it is important to distinguish between the conceptual and operational definitions of job satisfaction.

2.2. Factors affecting job satisfaction

2.2.1. Background variables: Demographic and socioeconomic variables

Studies have shown inconsistent results concerning the relationships between most background variables and job satisfaction, except for gender. Most reviewed studies show a consistent finding of no relationship between gender and job satisfaction of either IT personnel (Igbaria & Guimaraes, 1993; Kuo & Chen, 2004; Sumner & Niederman, 2003-2004) or of librarians/ academics (Certin, 2006; Chwe, 1978; Hovekamp, 1995; Lynch & Verdin, 1987). With respect to age, some researchers have found that the older employees were more satisfied with their jobs than the younger individuals (Kuo & Chen, 2004); on the other hand, other researchers have found that age was not a factor affecting one's job satisfaction (Certin, 2006; Chwe, 1978; Hovekamp, 1995; Lynch & Verdin, 1987). Experience, as a variable, also yielded inconsistent results: Chwe (1978) and Hovekamp (1995) found no relationship between experience and the job satisfaction of

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librarians, while Tella, Ayeni, & Popoola (2007) posit that two studies have shown a relationship between experience and the job satisfaction of librarians.

Regarding education, Metle's (2001) literature review provides evidence of inconsistent findings involving the relationship between educational level and job satisfaction. In fact, Kuo & Chen (2004) found no relationship between education and the job satisfaction of IT personnel in Twain. However, Lim (2007) found that library IT workers with an MLS degree were more satisfied with their jobs than were those without an MLS degree. On the other hand, studies have found that salary is positively related to job satisfaction either in library settings (Estabrook, Bird, & Gilmore, 1990; Hovekamp, 1995) or business settings (Kuo & Chen, 2004; Rayton, 2006). The inconsistent findings with respect to most background variables lead me to further test whether or not the variables including gender and race are related to job satisfaction of library IT workers.

2.2.2. Sense of belonging

Barak & Levin (2002) discuss a number of studies that convey the relationship between acceptance by the organization and job satisfaction, and evidence of a negative relationship between the perception of a lack of fit between employees and others in the organization and job satisfaction. Lustig & Strauser (2002) also discuss that a sense of cohesion is positively related to life and job satisfaction. In addition, according to the sense of community theory (McMillan, 1996), the three factors of faith in wanting to belong, a feeling of acceptance and paying dues are the sources relating to a sense of belonging. Then, the three factors of a sense of belonging are then likely to relate to job satisfaction.

2.2.3. Job autonomy

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According to Hackman & Oldham (1975), job autonomy is one of the key sources of job satisfaction. Other researchers have reported a positive relationship between these two variables (Cohrs et al., 2006; Weaver, 1977).

2.2.4. Promotion opportunities based on merit

Promotion is considered as one of the important sources of job satisfaction (Locke, 1976). A recent study also provides supporting evidence by showing that promotion is the most influential factor in affecting the job satisfaction of school teachers (Sharma & Jyoti, 2006). As a result, what constitutes the base of promotion may also affect the job satisfaction of employees. Regarding this notion, Locke (1976) remarks that promotion based on merit or ability to do the job is one way of promoting a sense of fairness or equity to employees, which is likely to be related to the job satisfaction of employees. In other words, those who perceive more promotion opportunities due to their ability to do their jobs are more likely to be satisfied with their work.

2.2.5. Role variables

Baroudi (1985) examined the job satisfaction of information system personnel in relation to the boundary spanning role of information system (IS) personnel, role ambiguity and role conflict. His study is particularly relevant to library IT workers' job satisfaction regarding their broker or boundary spanning role (bridging different communities of practice) as a previous study showed that library IT workers played a moderate role as a broker or boundary spanner (Lim, 2007). Baroudi (1985) also found that there was a positive relationship between the boundary spanning role and role conflict. In addition, the boundary spanning role had an indirect effect on the job satisfaction of IS personnel through role conflict. Similarly, Igbaria & Guimaraes's

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(1993) study demonstrated that role ambiguity was negatively related to the job satisfaction of information center employees.

On the other hand, Pawlowski & Robey (2004) found that IT professionals in a manufacturing company perceived their broker's or boundary spanner's role advantageous regarding their promotions, as they could move across organizational boundaries. In turn, Baroudi's (1985) and Pawlowski & Robey's (2004) studies on the broker's role provide different directional implications regarding job satisfaction. However, both studies suggest that the broker's role may affect the job satisfaction of IT people.

2.2.6. Other variables: personality and career orientation

The variables of personality types and career orientation were not examined for this study, but are often discussed in the job satisfaction literature. Williamson, Pemberton, & Lounsbury (2005) examined the relationship between personality style and the job satisfaction of librarians working in various types of libraries and other informational professionals. They found that five personality factors such as optimism, emotional resilience, propensity for teamwork, a visionary work style and work drive (i.e., the disposition to work long hours) were positively related to job satisfaction. Similarly, Cohrs et al. (2006) examined job satisfaction factors by using three samples of mathematics teachers at state schools, mathematicians in private business and professionals in private business. They measured the Big Five personality factors, including neuroticism, extraversion, openness to experience, conscientiousness and agreeableness. They found that among the five personality traits, neuroticism was a negative factor affecting job satisfaction across the three samples, although the significant

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effects of neuroticism disappeared in combination of work situational factors in two samples.

Finally, McMurtrey and his colleagues (2002) examined the relationships among career orientation, CASE (Computer-Aided Software Engineering) technology sophistication and the job satisfaction of IT professionals. Their study showed that IT professionals with technical competence had higher job satisfaction than those with managerial competence in a CASE tool environment (McMurtrey, Grover, Teng, & Lightner, 2002). In a similar vein, Chwe (1978) examined whether or not there was a difference in job satisfaction between catalogers and references and found no significant differences between them. However, reference librarians were more satisfied than catalogers regarding specific aspects of work including, the creativity of work, the variety of work and the opportunity for social service.

3. Research questions and hypotheses

Based on the literature review, the below research questions and hypotheses were drawn:

3.1. Research questions

The main research questions of the study are twofold: First, are background variables related to the job satisfaction of the library IT workers? Second, are work-related variables good predicators of job satisfaction for the library IT workers?

3.2. Research hypotheses

H1. Gender is related to the job satisfaction of library IT workers.

H2. Race is related to the job satisfaction of library IT workers.

H3. Age is related to the job satisfaction of library IT workers.

H4. An MLS degree is related to the job satisfaction of library IT workers.

H5. Years worked in the library are related to the job satisfaction of library IT workers.

H6. Salary is related to the job satisfaction of library IT workers.

H7. A sense of belonging is related to the job satisfaction of library IT workers.

H8. Faith in wanting to belong is related to the job satisfaction of library IT workers.

H9. A feeling of acceptance is related to the job satisfaction of library IT workers.

H10. Paying dues is related to the job satisfaction of library IT workers.

H11: Job autonomy is related to the job satisfaction of library IT workers.

H 12: Promotion opportunities due to their technical expertise is related to the job satisfaction of library IT workers.

H13. The brokers' role is related to the job satisfaction of library IT workers.

4. Procedures

4.1. Population and sample

A mail survey of library IT workers regarding job satisfaction in relation to their sense of belonging, job autonomy, and their broker's role was conducted. The population consists of the IT workers in each main library of the 99 university member libraries of the Association of Research Libraries (ARL) in the United States. The sample of the study consisted of the IT workers of each IT department of 30 university libraries in the mid-western and north-eastern United States. Two sampling frames were used: the ARL directory and the library staff directories of each sample university library. A total of 443 mail surveys were sent to the sample of IT workers in May 2006 with a follow-up postcard; 202 surveys were returned, resulting in a 45.6% response rate.

4.2. The measures of the study

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For this study, job satisfaction was defined as an individual's feelings and evaluative judgment about one's job. Hackman & Oldham's (1975) Job Diagnostic Survey (JDS) was adopted for the measures of the job satisfaction concept. These measures are described in the section of the literature review (α=.83).

A sense of belonging was defined as an individual's feelings of belongingness to the organization. Three items of the Perceived Cohesion Scales (PCS) (Bollen & Hoyle, 1990) were used (α=0.94). On the other hand, based on McMillan's revised Sense of Community Theory (McMillan, 1996), ten items reflecting the three factors of faith in wanting to belong (α=0.78), a feeling of acceptance (α=0.92), and paying dues (α=0.80) were developed.

Job autonomy was defined as the degree to which a job provides discretion to an individual in performing the job. Employing the Job Characteristic Inventory (JCI) (Sims Jr., Szilagyi, & Keller, 1976), different aspects of job autonomy were measured, including independence from the supervisor and others, the degree of freedom, and independent thoughts in performing one's job (α=0.82).

Finally, the broker's role or the boundary spanner's role was defined as a role, bridging between different work communities. Based on the literature of IT workers (Barley, 1996; Gordon, 2003), four items of the job role were developed in order to measure the broker's role of IT workers (α=0.78). One item was developed based on Pawlowski & Robey (2004) to measure the perception regarding their promotion opportunities due to their technical expertise. Each scale was scored using a five-point scale raging from 1 (strongly disagree) to 5 (strongly agree) (see Appendix A).

5. Findings

5.1. Sample characteristics

Male IT workers outnumbered their female counterparts. That is, among the respondents, 45.5% (N=91) were female and 53.5% (N=107) were male. A majority of the respondents were Caucasian, consisting of 86 % (N=172) of the respondents, followed by Asian (7%; N=14), African-American (2.5%; N=5), other racial groups (2.5%; N=5), and Hispanic (1%; N=2). The age distribution showed a wide range of the different age groups. Approximately, 58% of the respondents (N=116) ranged between 35 and 54: 29% (N=58) were between 35 and 44, and another 29% were between 45 and 54. On the other hand, the remaining 41% of IT workers fell evenly into either "under the age of 35" (21.5%; N=43) or "over the age of 55" (21%; N=40).

Regarding educational levels, approximately half of the respondents (52%; N=104) held a Master's or equivalent degree and 27.5 % (N=55) held a Bachelor's degree. A sizable number of the respondents (10.5%; N=21) held than a less than a Bachelor's and a small number of respondents (3%; N =6) held a Ph.D. Among the respondents, approximately 37.5% (N=75) held an MLS degree. With respect to years worked in the current library, more than half of the respondents had been at their respective libraries for a short period of time: less than 10 years (57.6%; N=114); 11-22 (24.5%; N=49); and more than 22 years (17.5%; N=35).

Finally, the distribution of the respondents' gross salaries was as follows: less than $40,000 (15.5%; N=31); $40,000-$50,000 (21.5%; N=43); $50,001-$60,000 (17.5%; N=35); $60,001-$70,000 (17.5%; N=35); $70,001-$80,000 (14.0%; N=28); and more than 80,001 (11%; N=22) (see Table 1).

5.2. Results of hypothesis testing

Three sets of variables were tested using multiple regression analyses. The first set of variables consisted of background variables (Model 1), while the second set of variables included work-related variables such as a sense of belonging, three variables related to a sense of belonging, job autonomy, opportunities for position advancement and the broker's role (Model 2). The final set of variables included both background and work-related variables (Model 3). A two-tailed test under α = .05 was performed to test all of the hypotheses.

5.2.1. Background variables

The first regression model (Model 1) includes only gender, race, age, holding an MLS, years worked in the library and salary. Instead of education, I used an MLS degree for my analysis for the following reasons: First, a previous study showed that an MLS degree was a factor affecting the job satisfaction of library IT workers (Lim, 2007). Second, an MLS degree is an educational degree, meaning that there is redundant information between education and an MLS degree (a high correlation between education and an MLS degree (r=.627) of the current sample).

Among the variables, salary and gender were significant factors affecting the job satisfaction of library IT workers. More specifically, salary was a positive factor (β=.358; p<.000), meaning that those who had a higher salary were more satisfied with their job than those with a lower salaries. Female IT workers were more satisfied with their jobs than their male counterparts (β= -.171; p<.029). On the other hand, other variables such as race, age, holding an MLS degree, and years worked in the library were not related to the job satisfaction of the library IT workers. Here, race was analyzed as two groups of Caucasians and non-Caucasians due to a small number of each of the minority ethnic

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groups. An MLS degree was not a significant factor affecting the job satisfaction of library IT workers when other demographic and socioeconomic variables were considered (see Table 2). However, when all of the research variables were considered, the gender effect disappeared while the MLS effect appeared. A detailed description is presented below.

5.2.2. Work-related variables: Sense of belonging, faith in belonging, acceptance, paying dues, job autonomy, promotion opportunities and the broker's role

The second regression model (Model 2) includes only work-related variables without demographic and socioeconomic variables. A sense of belonging to one's organization was positively related to job satisfaction (β= .129; p<.044). Faith in wanting to belong (β= .203; p<.001) and a feelings of being acceptance (β= .328; p<.000) were positively related to the library IT workers' job satisfaction, while the factor of paying dues did not affect job satisfaction. More specifically, those who had higher faith in wanting to belong to their libraries were more satisfied with their jobs than were those with lower faith. Those who had higher feelings of acceptance by their libraries were more satisfied with their jobs than those who had lower feelings of acceptance. However, there was no statistical difference of job satisfaction between those who paid more dues to their libraries than those who did so to a lesser extent. In addition, job autonomy was positively related to job satisfaction (β=.166; p<.000). On the other hand, those who evaluated their technical expertise as advantageous regarding their position advancement or promotion were more satisfied with their jobs than those who did not (β=.286; p<.000). Finally, the broker's role was not related to their job satisfaction (see Table 2).

5.2.3. Both background and the work-related variables

When all of the variables were considered (Model 3), there were two changes in the significant effects of background variables on the job satisfaction of library IT workers. That is, gender was not significant anymore, while holding an MLS degree was negatively related to the job satisfaction of the library IT workers (β= -.104; p<.040). That is, when controlling other variables, the gender effect was insignificant (i.e., the part correlation between gender and job satisfaction: r= -.074 while its zero-order correlation: r=-103) (see Table 3). On the other hand, the variables of both an MLS degree and the broker's role had a sign of suppression, showing opposite signs between zero-order correlations and regression coefficients. In other words, the variables of an MLS degree and the broker's role suppressed the variance in other variables that were not relevant to job satisfaction. In the case of the variable of an MLS degree, when controlling other variables, its correlation (absolute value) with job satisfaction was increased (zero-order correlation=.131; partial correlation= -.156; and part correlation= -.082) resulting in a significant result. Salary remained as a significant factor affecting the library IT workers' job satisfaction (β=.183; p<.001) (see Table 2). In other words, the research hypotheses H4 and H6 were supported, while H1, H2, H3 and H5 were not supported (see Table 3). The background variables explained 13.8% of the variance in job satisfaction.

The significant results of all of the work-related variables remain the same in combination with the background variables. The variables of a sense of belonging (β=.157; p<.022), faith in wanting to belong (β=.159; p<.012), a feeling of acceptance (β=.315; p<.000), job autonomy (β=.175; p<.000) and promotion (β=.268; p<.000) were positively related to job satisfaction. In other words, the research hypotheses H7, H8, H9, H11 and H12 were supported. On the other hand, paying dues and the broker's role were

not related to job satisfaction, indicating that hypotheses H10 and H13 were not supported. Among the significant factors, a feeling of acceptance, promotion, salary, and job autonomy were four strong factors affecting the job satisfaction of the library IT workers. The work related variables explained 59% of the variance in job satisfaction. A summary table of three regression models using different sets of variables, and a summary of hypothesis tests and correlations are presented in Tables 2 and 3 respectively.

5.4. Summary of the findings

This study examined both background and work-related variables. Among the background variables, salary and an MLS degree were significant factors affecting the job satisfaction of library IT workers. However, an MLS degree was negatively related to the job satisfaction of library IT workers. One possible reason is described in the discussion. Among the work-related variables, a sense of belonging, faith in wanting to belong, a feeling of acceptance, job autonomy and promotion opportunities due to their technical expertise were positively related to the job satisfaction of library IT workers, while neither paying dues nor the broker's role was related to their job satisfaction.

6. Discussion

The study showed that an MLS degree was a factor affecting library IT workers' job satisfaction when all of the research variables were considered. However, its effect on job satisfaction was negative, which was an unexpected result. One possible reason for this unexpected result may be related to the value of an MLS degree in terms of IT workers' tasks or performance evaluations. Those IT workers with an MLS degree may feel that their MLS degrees were not linked to their performance evaluations, which may

decrease their job satisfaction. However, further research is required to validate this argument.

Among the work-related variables, a feeling of acceptance and their perceptions regarding their technical expertise as the opportunities for position advancement were particularly important factors affecting the job satisfaction of library IT workers. On the other hand, their broker's role of bridging between the technical and library communities was negatively related to job satisfaction, but its effect was not significant. This result indicates that the broker's role may be associated neither with the role conflicts of library IT workers (which may decrease their job satisfaction) nor related to the opportunity to form partnership with other units (which may increase their job satisfaction). Or, the broker's role may be related to the opportunity to form partnerships, but these opportunities to form partnership may not be related to job satisfaction.

Finally, against expectations, paying dues was not a significant job satisfaction factor. One possible interpretation may be that paying dues to one's library may be related to a sense of duty or obligation as a library member, which may not cause pleasurable feelings involving their job.

This study's findings provide a number of implications for library managers. First, given the finding that an MLS degree is related to the job satisfaction of library IT workers, library administrations need to provide different ways of increasing job satisfaction for both the MLS and non-MLS groups by identifying or understanding the different needs or values of the two groups, a project requiring further research. Second, library administrations need to provide certain mechanisms through which library IT workers feel welcomed and valued by their libraries. According to Locke (1976), verbal

recognition of employees' work is one of the most important events leading to job satisfaction. This notion suggests that recognition of any achievements by individual IT workers or that providing feedback about their performance may increase feelings of acceptance of library IT workers. Subsequently, library managers may promote the library IT workers' sense of belonging to their library by providing an environment in which library IT workers feel welcomed. Third, the finding that library IT workers who perceived their technical expertise as advantageous regarding their promotion were more satisfied with their job than those who did not implies that promotion policies or performance evaluations based on their expertise or merit may enhance the job satisfaction of library IT workers. Fourth, library administrators need to provide a great amount of discretion to library IT workers in performing their jobs. Finally, salary is also an issue in job satisfaction of library IT workers. Library managers need to be aware of this issue in order to increase the job satisfaction of library IT workers.

7. Conclusion

This study found that salary, a sense of belonging, faith in wanting to belong, a feeling of acceptance, job autonomy, and promotion due to technical expertise were positively related to job satisfaction. On the other hand, an MLS degree was negatively related to job satisfaction, which was an unexpected result.

The study has some limitations. First, it required a great endeavor to identify IT workers in the sampling process, as a directory of library IT workers does not exist. As a result, thirty libraries out of 99 ARL member libraries were purposely selected as a study sample. Due to this sampling method, it is difficult to generalize the findings of the study to the entire library IT worker population. Second, the promotion variable had only one

indicator. More items would have been desirable, as more items can measure various aspects of promotion. Third, there is a need for research in reexamining the relationship between an MLS degree and the job satisfaction of library IT workers. Finally, this study examined only certain factors. There may have been other omitted variables affecting job satisfaction of library IT workers. For instance, job satisfaction researchers have paid attention to other variables, such as job performance (Christen et al., 2006; Ibrahim, Sejini, & Qassimi, 2004), self-evaluation (Judge, Bono, Erez, & Locke, 2005), personality types (Cohrs et al., 2006; Williamson et al., 2005) and career orientation (McMurtrey et al., 2002). Further research is needed concerning the relationships between these variables and job satisfaction in order to better understand the job satisfaction of library IT workers.

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Appendix A. Survey Items

Job satisfaction
I am fairly well satisfied with my job.
I am enthusiastic about my job most days.
I am satisfied with my job security.
I am satisfied with my pay or other compensation.
I am satisfied with my peers or co-workers.
I am satisfied with the relationship between my supervisor and me.
I am satisfied with the opportunity for personal growth and development in my job.

Sense of belonging
I feel I belong to the library community.
I feel that I am a member of the library community.
I see myself as part of the library community.

Faith in wanting to belong
I am proud to be part of the library community.
I feel there is a considerable number of respectable people in the library.

Feeling of acceptance
I feel welcomed in the library.
My colleagues appreciate my opinions at staff meetings.
My colleagues appreciate my work.
I feel I am considered as an important member of the library.

Paying dues
I often offer my help whenever others need me.
I often work more than I need to do for my job.
I often go the extra mile for others.
I am willing to sacrifice myself for the library.

Job autonomy
I am able to act independently of my supervisor in performing my job duties.
I am able to do my job independently of others.
The freedom to do pretty much what I want in my job is high.
The opportunity for independent thought or action in my job is high.

Broker's role
I often translate technical jargon to librarians or library users.
I often communicate with vendors.
I often communicate with the campus technology unit.
I feel like I am a bridge between librarians and the technical community.

Promotion opportunity
Due to my technical expertise, I have advantages to advance in my position.

Table 1. Sample Characteristics

Sample Characteristics			
Gender	Female	N=91	45.5%
	Male	N=107	53.5%
Race	African-American	N=5	2.5%
	Asian	N=14	7%
	Caucasian	N=172	86%
	Hispanic	N=2	1%
	Other	N=5	2.5%
Age	Under 35	N=43	21.5%
	35-44	N=58	29%
	45-54	N=58	29%
	Over 55	N=40	20%
Education	Less than a Bachelor	N=21	10.5%
	Bachelor	N=55	27.5%
	Some graduate work	N=13	6.5%
	Master	N=104	52%
	Doctorate	N=6	3%
MLS	Yes	N=75	37.5%
	No	N=124	62%
Years in the library	Less than 5 years	N=51	25.5%
	5-10	N=63	31.5%
	11-16	N=26	13%
	17-22	N=23	11.5%
	More than 22 years	N=68	17.5%
Salary	Less than 40,000	N=31	15.5%
	40,000-50,000	N=43	21.5%
	50,001-60,000	N=35	17.5%
	60,001-70,000	N=35	17.5%
	70,001-80,000	N=28	14.0%
	More than 80,001	N=22	11.0%

Table 2. Summary of Regression Models for Job Satisfaction

Variable	Model 1		Model 2		Model 3	
	Standardized Coefficient (β)	P-Value	Standardized Coefficient (β)	P-Value	Standardized Coefficient (β)	P-Value
Gender	-.171	**.029**			-.086	.064
Race	-.091	.199			-.008	.856
Age	-.097	.287			.004	.938
MLS	-.037	.645			-.104	**.040**
Years in the library	.080	.377			.013	.807
Salary	.358	**000**			.183	**.001**
Sense of Belonging			.129	**.044**	.157	**.022**
Faith in Belonging			.203	**.001**	.159	**.012**
Acceptance			.328	**.000**	.315	**.000**
Paying dues			.041	.378	.047	.299
Job Autonomy			.166	**.000**	.175	**.000**
Promotion			.286	**.000**	.268	**.000**
Broker's role			-.046	.301	-.073	.115
N	185		185		185	
R^2	.138		.701		.728	
R^2 Change	.138				.590	

Dependent Variable: Job Satisfaction
Dummy variables: Gender (Female:0, Male:1), Race (Caucasian:0, Non-Caucasian:1), MLS (Non-MLS: 0, MLS:1)

Table 3. Summary of Hypothesis Tests and Correlations

Variable	Standardized Coefficient (β)	Zero-order Correlation	Part Correlation	Hypothesis	Result of Hypothesis Test
Gender	-.086	-.103	-.074	H1	NS
Race	-.008	-.136	-.007	H2	NS
Age	.004	.116	.003	H3	NS
MLS	-.104*	.131	-.082	H4	**S**
Years in the library	.013	.179	.010	H5	NS
Salary	.183*	.306	.130	H6	**S**
Sense of Belonging	.157*	.621	.092	H7	**S**
Faith in Belonging	.159*	.632	.101	H8	**S**
Acceptance	.315*	.749	.192	H9	**S**
Paying dues	.047	.333	.042	H10	NS
Job Autonomy	.175*	.428	.157	H11	**S**
Advancement	.268*	.594	.215	H12	**S**
Broker's role	-.073	.158	-.063	H13	NS

Dependent Variable: Job Satisfaction

N=185, R^2 = .728
* p<0.05
NS: Not supported; S: Supported