

Mobile Libraries: Librarians' and Students' Perspectives

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This study which is based on the Technological Acceptance Model (TAM), seeks to explore whether librarians and LIS students are familiar with the newest technological innovations and whether they are ready to accept them. The research was conducted in Israel during the first and second semesters of the 2012 academic year and considered two populations: librarians and LIS students. Researchers used two questionnaires to gather data: a personal details questionnaire, and a mobile technology questionnaire. On the whole, the current study supported the two core variables of the TAM (perceived ease of use and usefulness), as well as personal innovativeness that may predict librarians' and students' behavioral intention to use mobile services in the library.

Mobile Technologies

Introduction

Mobile technologies are characterized by their small size and portability. Mobile devices include smartphones, tablets, and netbooks. They change the way people communicate since they provide information retrieval and other communication options on a single device. An ever-increasing number of people worldwide access the Internet through their mobile devices daily to read and send e-mails, check the news and weather, do their banking, and access social networks such as Facebook or Twitter. Taking into consideration these mobile devices and their impact on our daily life, the question arises whether those in the Library and Information Science (LIS) community (both librarians and students) are ready to adopt mobile library services.

Mobile Libraries

Mobile libraries involve the delivery of library services through mobile devices. According to Speight, the increasing use of mobile devices in various aspects of life is causing libraries to consider adapting these new technologies.¹ Lippincott adds that libraries will have to offer users content and services suitable for these devices.² Furthermore, Bridges, Rempel, and Griggs claim that it is the right time for libraries to develop fully mobile websites.³ Hahn adds that the mobile phenomenon enables libraries to create new services, as well as reach a greater number of people.⁴ Several studies have explored implementing mobile technologies within public and academic libraries. Connolly, Cosgrave, and Krkoska report a project in which a mobile version of the library website was created, including an

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iPhone/iPod Touch application.⁵ Early responses to this mobile platform were positive. Kroski, in her report about libraries and mobile technologies, illustrates that there are different services that can be made available via a library's mobile website.⁶ Paterson and Low recommend specific steps for academic libraries to develop their mobile sites. They suggest that mobile library users should be able to check due dates, renew and reserve items, search items in the library effectively, as well as navigate and locate items easily.⁷ Some studies reveal that mobile library users accessed the library service to find brief pieces of information, while others suggest that users reported they would like to search the library catalogue on their mobile device frequently.⁸ In another study, Walsh investigated students' attitudes and use of mobile library services and found that they did not view text messaging from the library as intrusive. However, students noted that they would be interested in mobile library services only when they perceive a need or a benefit.⁹ In a further study, Seeholzer and Salem explored students' perceptions of mobile academic library websites, which revealed that students expressed more interest in using their mobile devices to interact with library sources and services than expected. They wanted to use their smartphones for searching databases and the library catalog, as well as staying informed by the library staff.¹⁰ Barnhart and Pierce concluded that the combination of mobile librarians, mobile patrons, and mobile content provides an opportunity for the library to shift from having a fixed location to becoming ubiquitous.¹¹

Problem Statement

Because the use of mobile technologies is becoming increasingly popular, this study seeks to explore whether librarians and LIS students are familiar with the newest technological innovations and whether they are ready to accept them. Do they understand the power of mobile services in libraries? Are they

ready to adopt new tools? Although various studies have focused on mobile services and mobile libraries, no one has so far integrated various sections of the LIS arena by focusing on librarians' and LIS students' perspectives toward mobile services. So it will be both intriguing and challenging to examine their perceptions of mobile services. The objectives of this study are to examine the following questions: (a) if there are differences between librarians' and LIS students' perspectives toward mobile services; and (b) to what extent does the Technology Acceptance Model (TAM) explain librarians and LIS students' perspectives about mobile services. The research may contribute to the theoretical understanding of the variables that influence librarians' and LIS students' attitudes toward mobile services, and it may lead to further inquiry in this field.

Literature Review

Technological Acceptance Model (TAM)

The current study is based on the Technological Acceptance Model (TAM) that was introduced by Davis in 1989. The model was developed to investigate the factors that influence computer acceptance by users. Its two key components are *perceived usefulness* and *perceived ease of use*.¹² Perceived usefulness is considered the user's assumption that using a specific application will increase his or her job performance within an organization. Bhattacharjee claims that a person is more likely to continue usage when it is perceived to be beneficial.¹³ Several researchers claim that perceived usefulness has a positive relationship with attitude and behavioral intention.¹⁴ Perceived ease of use refers to the degree that the user expects that the new application will be free of effort.¹⁵ Davis et al. asserted that improvements in ease of use contribute to increased performance.¹⁶ Venkatesh and Davis added that greater ease of use causes improved performance as well as an increased perception of usefulness.¹⁷ Serenko noted that those who perceive a computer application to be easy to

use will apply it more extensively and will consider it more useful for completing certain tasks.¹⁸ Other studies have demonstrated that perceived ease of use affect intention, through the perception of increased usefulness.¹⁹

Davis et al.²⁰ were the first to explore the model in the United States. Afterward, they used the TAM to investigate the variables that impact the use of word processing software among students, finding that students' perceived usefulness has a direct impact on the decision to use or not to use the word processing software, and that perceived ease of use has less impact on the decision.²¹ Al-Gahtani studied the application of the TAM in England, suggesting that perceived ease of use and perceived usefulness, along with personal attitudes, were the variables that affected the acceptance of information technology (IT).²² Rose and Straub checked this model in the Arab world, finding it applicable in that region.²³

Several studies focusing on the TAM were carried out in the library and science arena. Thong, Hong, and Tam,²⁴ Vaidyanathan, Sabbaghi, and Bargellini,²⁵ and Park et al.²⁶ studied factors that may affect users' acceptance of digital libraries. Thong, Hong, and Tam identified three features for system interface, three organizational variables, and three personal differences that affect the perceived usefulness, the ease of use, and the decision to employ digital libraries.²⁷ In another study, Vaidyanathan, Sabbaghi, and Bargellini found five systematic and individual factors that affected respondents' perceived ease of use and perceived usefulness of digital libraries.²⁸ Recently, Park, Roman, Lee, and Chung, who examined the TAM in developing countries, maintained that perceived ease of use of the library system had a significant effect on perceived usefulness, which led to behavioral intention to use digital libraries.²⁹ In addition, external factors that affect perceived ease of use and usefulness are important components in designing and operating digital library systems

in developing countries. Summing up previous research, Jung-Jung and Chang assert that previous studies have found that TAM has a relatively simple structure but comparable explanatory power for an individual's adoption of information technology.³⁰

Personal Innovativeness

Another variable that may affect and predict respondents' perspectives toward mobile services is personal innovativeness. Rogers addresses "innovativeness" as the degree to which an individual, when compared to others, is early in adopting innovations.³¹ This trait can be subject to group influences, and, since it is more closely aligned to a behavior, it does not necessarily relate to personality characteristics.³² Agarwal and Prasad proposed that the personal innovativeness variable is associated with information technology and suggest that it be defined as the willingness to try out new information technology.³³ People with higher personal innovativeness would therefore be more likely to take advantage of a new technology. According to their definition, it is a stable personality characteristic not influenced by situational considerations. Van Raaij and Schepers refer to personal innovativeness as the extent of openness to change.³⁴ Lewis, Agarwal, and Sambamurthy add that this component is an important predictor of technology acceptance.³⁵ Uray and Dedeoglu³⁶ and Venkatraman³⁷ suggest that innovative people look for mentally and sensory challenging experiences.

Hypotheses

Assuming that perceived ease of use, usefulness, personal innovativeness, and smartphone usage may predict librarians and LIS students' behavioral intention to use mobile services, the underlying assumptions of this study are:

1. LIS students use mobile devices more than librarians (H_1).
2. LIS students' level of perceived ease of use of mobile technology

- is higher than librarians' level of perceived ease of use of mobile technology (H_2).
3. LIS students' level of perceived mobile services usefulness is higher than librarians' level of perceived mobile services (H_3).
 4. LIS students' level of personal innovativeness is higher than librarians' level of personal innovativeness (H_4).
 5. LIS students' level of behavioral intention to use mobile services in the library is higher than librarians' level of behavioral intention (H_5).
 6. The higher the level of perceived ease of use respondents have, the higher their behavioral intention to use mobile services in the library (H_6).
 7. The higher respondents perceive mobile services usefulness, the higher their behavioral intention to use mobile services in the library (H_7).
 8. The higher respondents' personal innovativeness is, the higher their behavioral intention to use mobile services in the library (H_8).
 9. Respondents who use smartphones will have higher behavioral intentions to use mobile services in the library than respondents who do not use smartphones (H_9).

Methods

Data Collection

The research was conducted in Israel during the first and second semesters of the 2012 academic year and considered two populations: librarians and LIS students. Three groups of Israeli librarians were selected from academic, public, and special library settings. Researchers sent a message and a questionnaire to an Israeli library and information science discussion group, explaining the study purpose and asking its members to com-

plete the questionnaire. This discussion group encompasses about 800 librarians. A total of 153 responses were received (19.25%). As for LIS students, there are approximately 800 enrolled nationwide. Researchers received permission to enter different courses in a prominent LIS department and delivered 200 questionnaires to the students. They explained the study purpose to students; of this group, 141 responded (17.62%). This research therefore had a total of 294 respondents.

Data Analysis

Of the librarians, 26 (17%) were male and 127 (83%) were female. Among LIS students, 26 (18.41%) were male and 115 (81.56%) were female. Addressing the entire sample, 52 respondents (17.68%) were male and 230 (82.31%) were female. The librarians' average age was 47, while that of the LIS students was 30. To examine differences among the two groups concerning age, a T-test was conducted and showed a significant difference, $t = 15.13$, $p < .001$. Among librarians, 43 (28.1%) used smartphones and 110 (71.9%) did not. Within the LIS students, 75 (53.1%) used smartphones and 66 (46.8%) did not. Concerning their education, 46 (30.1%) had a bachelor's in LIS, 74 (48.4%) had a master's in LIS, and 33 (21.6%) had a professional certificate in LIS. Regarding LIS students' education, 84 (59.5%) studied for a BA in LIS, 36 (25.7%) for a MA in LIS, and 21 (15%) for a PhD in LIS. Table 1 summarizes some of the demographic characteristics.

Measures

Researchers used two questionnaires to gather data: a personal details questionnaire and a mobile technology questionnaire (Appendix A). The personal details questionnaire had seven statements. The mobile technology questionnaire, based on Liu, Li, and Carlsson,³⁸ consisted of 15 statements rated on a 7-point Likert scale (1=strongest disagreement; 7=strongest agreement) and was previously validated by Aharony.³⁹ A principal components

TABLE 1
Librarians and LIS Students' Demographic Characteristics

Measures	Librarians		LIS Students		Total	
	Number	%	Number	%	Number	%
Male	26	17	26	18.41	52	17.68
Female	127	83	115	81.56	242	83
Age	47		30			
Smartphone Use	43	28.1	75	53.1	118	40.13

factor analysis using Varimax rotation with Kaiser Normalization was conducted, which explained 60 percent of the variance and revealed four distinct factors. These were: behavioral intention to use mobile technology (items 3, 6, 8, 12); perceptions about mobile technology ease of use (items 1, 9, 11); personal innovativeness (items 5, 7, 10); and perceptions about mobile technology usefulness (items 2, 4, 13, 14, 15). The values of Cronbach's Alpha were .82, .84, .83, and .70, respectively.

Results

To examine whether there are differences between the two groups concerning duration, frequency, and experience involving mobile devices, a MANOVA, which is a statistical test procedure for comparing multivariate means of several groups, was performed. The MANOVA revealed a significant difference between the two groups ($F(3.221) = 48.40, p < .001, \eta^2 = .40$). Means, standard deviations, and the MANOVA analysis for each group are presented in table 2.

Table 2 shows significant differences between the two groups concerning mobile use. The largest difference is associated with mobile duration use. The results demonstrate that students' mobile use in all three measures is higher than that of librarians. Since there was a difference between the groups due to age, a MANCOVA was performed in which age was entered as a covariate. The MANCOVA main aim is to test for significant differences between group means. Similar to previous results, significant differences were found between the two groups ($F(3.219) = 33.86, p < .001, \eta^2 = .32$). Thus, age is not the major factor influencing differences between the groups. To examine whether there is a difference between the groups concerning their smartphone use, a chi-square (χ^2) analysis was conducted. A significant difference between the groups was found, with $\chi^2 = 17.59, p < .001$. Among students, 52.2 percent use smartphones, while only 28.1 percent of librarians do so.

Investigating respondents' attitudes toward mobile technology, researchers used four measures: mobile technology

TABLE 2
Means and Standard Deviations of Respondents' Mobile Use

Measures	Librarians		Students		<i>F</i> (1,290)	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Duration	.59	1.16	2.54	1.20	138.32***	.38
Frequency	2.29	1.31	2.58	1.22	31.19***	.13
Experience	2.21	.88	2.61	.62	43.72***	.16

*** $p < .001$

TABLE 3
Means and Standard Deviations of Respondents' Attitudes toward Mobile Technology

Measures	Librarians		Students		F (1,290)	η ²
	M	SD	M	SD		
Innovativeness	5.86	.99	5.94	.97	.20	.00
Usefulness	5.27	1.06	5.58	1.10	6.03*	.02
Ease of Use	5.42	1.02	5.66	1.00	4.14*	.01
Intention	5.86	.99	5.94	.97	.50	.00

*p <.05

perceived ease of use, mobile technology usefulness, personal innovativeness, and behavioral intention to use mobile technology. To examine whether there are differences between the two groups concerning their attitudes toward mobile services, a MANOVA was performed and revealed a significant difference between them ($F(4,287) = 3.09, p < .05, \eta^2 = .04$). Means, standard deviations, and the MANOVA analysis for each research measure separately are given in table 3.

Table 3 shows significant differences between the two groups in relation to mobile technology perceived ease of use and mobile technology usefulness. LIS students perceive mobile technology usefulness and mobile technology perceived ease of use higher than do librarians.

Researchers wanted to examine the relationship between the research variables (mobile duration use, mobile frequency use, mobile experience, and respondents'

attitudes toward mobile technology, such as mobile technology perceived ease of use, mobile technology usefulness, personal innovativeness, and behavioral intention to use mobile technology), and performed Pearson correlations on each group separately. Pearson's correlation is used to find a correlation between at least two continuous variables. There were no significant differences between the two groups. Therefore, the following correlations address all respondents. Pearson correlations are presented in table 4.

Significant positive correlations were found between mobile duration use, mobile frequency use, mobile experience, and respondents' attitudes toward mobile technology. In other words, the more respondents use mobile services, the greater their intention to use mobile technology in the library. Further Pearson correlations were performed to examine the relationship between personal innovativeness,

TABLE 4
Pearson Correlations between Mobile Duration Use, Mobile Frequency Use, Mobile Experience, and Respondents' Attitudes toward Mobile Technology (n = 294)

Measures	Usefulness	Ease of Use	Innovativeness	Intention
Duration	.26***	.23***	.32***	.19**
Frequency	.23***	.25***	.37***	.25***
Experience	.19**	.22***	.29***	.19**

** p < .01
*** p < .001

mobile technology ease of use, mobile technology usefulness, and behavioral intention to use mobile technology. Significant high positive correlations were found between ease of use ($r = .52, p < .001$), personal innovativeness ($r = .62, p < .001$), mobile technology usefulness ($r = .71, p < .001$), and behavioral intention to use mobile technology.

Researchers also conducted a hierarchical regression analysis that is used to evaluate the relationship between a set of independent variables and the dependent variable, controlling for or taking into account the impact of a different set of independent variables on the dependent variable. In the current analysis, behavioral intention to use mobile technology

was considered as a dependent variable. The predictors were entered as five steps: (1) research two groups: librarians and students; (2) smartphone measures: users or nonusers and frequency of smartphone use; (3) perceptions about personal innovativeness and about mobile technology ease of use; (4) perceptions about mobile technology usefulness; (5) interactions between the two research groups X research measures. The interactions that were added in the fifth step did not add significantly to the explained variance, thus the following analysis deals only with the four first steps. This regression explained 57 percent of the behavioral intention to use mobile technology. Table 5 presents the coefficients of this regression.

TABLE 5
Hierarchical Regression Coefficients of Respondents' Behavioral Intention to Use Mobile Technology (n =294)

Step	Predictors	B	β	R ²	ΔR^2
1	Group	.28	.14*	.02	.02
2	Groups	-.14	-.07	.11***	.09***
	Smartphone Use	.38	.20*		
	Frequency of Use	.16	.21**		
3	Groups	.18	.09	.43***	.32***
	Smartphone Use	.25	.13		
	Frequency of Use	.01	.02		
	Innovativeness	.33	.47*		
	Ease of Use	.18	.19**		
4	Groups	.26	.12	.57***	.14***
	Smartphone Use	.20	.10		
	Frequency of Use	.00	.00		
	Innovativeness	.19	.26***		
	Ease of Use	.09	.10		
	Usefulness	.42	.48***		

*p < .05
 **p < .01
 ***p < .001

Examining the first step (research two groups) reveals that the group variable contributed significantly by adding 2 percent to the explained variance. The beta coefficient was positive. Students appear to express higher intention to use mobile technology in the library than librarians. The second step introduced the smartphone variables (usage or non-usage of smartphone and the frequency of smartphone usage) and contributed significantly by adding 9 percent to the explained variation of behavioral intention to use mobile technology. Beta coefficients were positive. In other words, respondents who use smartphones regularly have greater behavioral intention to use mobile technology in the library. The third step introduced perceptions about personal innovativeness and mobile technology ease of use, which contributed significantly by adding 32 percent to the explained variance of behavioral intention to use mobile technology. Beta coefficients were again positive. Respondents who perceive themselves as higher in personal innovativeness, and who perceive mobile technology as easier to use, appear to have a higher behavioral intention to use mobile technology in the library. The fourth step added respondents' perceptions about mobile technology usefulness, and this also contributed significantly by adding 14 percent to the explained variance of behavioral intention to use mobile technology. The beta coefficient was positive. We may conclude that the more respondents perceive mobile technology as useful, the greater is their behavioral intention to use mobile technology. The inclusion of this variable also caused a decrease in the β size of personal innovativeness. Sobel test indicated that usefulness mediates between personal innovativeness and behavioral intention to use mobile technology ($z = 8.10, p < .001$). Hence, the more respondents perceive mobile technology as innovative, the more they perceive its usefulness, and the higher their intention to use it.

Discussion

The present research explored two main themes: whether there are differences between librarians and LIS students' perspectives toward mobile services; and to what extent the TAM model explains librarians' and LIS students' perspectives about mobile services. The first issue refers to differences between the two groups and addresses the first five research hypotheses. The findings reveal that four out of five hypotheses were accepted. LIS students use mobile phones more than librarians (H_1). In the current research, LIS students were younger than librarians; thus, these findings are not surprising and echo other research that found age is one of the most important variables influencing IT acceptance⁴⁰ and that older workers are less prone to adopt new IT products.

Results pertaining to H_2 and H_3 , which refer to the differences between the two groups, were also supported. The findings show that LIS students' levels of perceived ease of use of and usefulness of mobile technology are higher than those of librarians. Concerning the component of mobile services' ease of use, it seems that students, who make greater use of mobile technologies, perceive its use as easy, smooth, free of effort, accessible, and simple. Moreover, it appears that students who make greater use of smart technology appreciate its usefulness. These findings can be associated with Bhattacharjee,⁴¹ who determined that a person is more likely to continue usage when it is perceived to be helpful. In the present research, those students who have already used mobile technologies within different domains to a greater extent tend to see its benefits and assimilate it within the library sphere. Since the data indicate that the two core components of TAM are higher for LIS students than for librarians, we can assume that this is the result of greater use of and exposure to new IT applications by these participants.

However, H_4 , which focuses on the difference between the groups concerning

their level of personal innovativeness, was not accepted. No significant difference was found between LIS students and librarians. This finding may be explained as follows: perhaps because personal innovativeness is considered a stable personality characteristic across situational considerations,⁴² it does not matter if a respondent is a librarian or a student. The personality characteristic is the dominant feature and not respondents' roles.

H₅ was accepted, revealing that LIS students intend to use mobile services in the library more than librarians. This finding expands on the trend discussed so far (that is, that students' perceptions about the value of mobile services in the library are higher than librarians'). In other words, students tend more than librarians to assimilate and use the newest IT applications in the library. It appears that students, who are in the process of learning, are more flexible and ready to examine new technological tools than librarians—who are more rigid and prefer continuing working with older, known platforms. Again, the findings suggest that students appreciate the usefulness and ease of use of mobile services and are ready to experience and work with them in library settings. This finding is consistent with other studies. Walsh asserted that students did not think text messaging from the library is intrusive,⁴³ and Seeholzer and Salem noted that students expressed more interest than expected in using their mobile devices to interact with library sources and services.⁴⁴ To conclude, the first question of the study reveals differences between the two research groups. Librarians should therefore understand that the library world is constantly changing and transforming itself. Thus, if they want to continue to be relevant, they should show patrons that they know and use the latest technologies as tools to improve their work. Librarians should recognize the benefits and costs of the newest technologies, use them to their fullest advantage, and serve library users with the most current means. They should

also understand that, by using mobile services in libraries, they will increase the number of users, since people can access the library without the restrictions of distance and time. The younger generation of LIS students has already grasped this concept, expressing their wish to assimilate technological innovations into their future workplaces.

H₆ and H₇ refer to the TAM model. The two hypotheses associated with the core components of the model were accepted. The findings suggest that the more respondents perceive the ease of use and usefulness of mobile services, the higher their intention to assimilate them into libraries. These results can be associated with previous studies noting that perceived ease of use and perceived usefulness affect the intention to use IT.⁴⁵ When librarians and students grasp library mobile services as easy to use and able to improve library work, they intend to use it. Thus, the more librarians and students encounter beneficial and simple mobile library applications, the more they use them. Hence, designers of mobile applications should emphasize potential usefulness, as well as ease of use of their products.

H₈ was also supported, adding another personality characteristic dimension to the TAM. Respondents who perceive themselves as higher in personal innovativeness also consider library mobile services positively and have higher behavioral intentions to use mobile technology in the library. This finding can be related to Agarwal and Prasad's suggestion that people with a high degree of personal innovativeness would be more likely to take advantage of a new technology,⁴⁶ in our case mobile services in the library. It can be argued that such people are looking for challenging and intriguing experiences. Adding these new technologies to the library is perhaps exciting for them. Furthermore, those who perceive themselves as higher in personal innovativeness may bring a fresh, up-to-date perspective of the library to other library users.

The last hypothesis (H_9) was also accepted, indicating that respondents who use smartphones have higher intentions to use mobile services in the library than those who do not use smartphones. In other words, those who have already worked with mobile devices tend to transfer their experience to libraries as well. Most likely, they recognize the easy interface that mobile services offer, as well as the ability to access databases and other library services anywhere and anytime. This finding can be associated with Spacey, Goulding and Murray's study of the attitudes of public library staff to the Internet, based on TAM. They noted that perceptions toward the Internet are related to its actual use.⁴⁷ That is, those librarians who have experienced working with the Internet have better perceptions toward it. To sum up, the last four hypotheses addressed the TAM model and expanded it by adding further characteristics, such as personal innovativeness and smartphone use, that may explain why people adopt or do not adopt new technologies.

Conclusions and Limitations

On the whole, the current study supported the two core variables of the TAM (perceived ease of use and usefulness), as well as personal innovativeness that may predict librarians' and students' behavioral intention to use mobile services in the library. Hence, we should try to continue and strengthen this trend within the LIS community to show library patrons that the main actors in this field know, master, and use current technological tools. The study found that the main difference between the two groups is smartphone use. This variable has a great effect on participants' behavioral intention to use mobile services in the library. As noted, LIS students make greater use of mobile

technology; as a result, their attitudes toward this phenomenon are more favorable. It seems, then, that library directors should expose librarians more extensively to the latest technologies, demonstrate their advantages, and explain to librarians how to use them as tools to improve library services. We assume that greater exposure and experience with mobile devices may change and improve librarians' attitudes toward incorporating mobile services in the library. Furthermore, library directors should explain to their employees that, because libraries are now in continuous change, they should use the most up-to-date technologies to stay relevant for their users. In addition, they can motivate their staffs to use new platforms by offering incentives.

However, this study has several limitations. The first is that, to gain a broader perspective, it is recommended to carry out a further study that will include a larger number of Israeli participants (from both groups). In addition, the current study focused only on the Israeli LIS community. Hence, the researchers suggest that, if we would like to have an international LIS perspective toward mobile library services, the study should be conducted in other countries as well. Another limitation that should be taken into consideration is the fact that perhaps those LIS students who participated in the survey wanted to create an impression that they are technologically savvy, a fact that might influence their responses. Moreover, future studies may include further variables in the TAM model to gain a thorough understanding of its significance.

Acknowledgement

The author would like to thank Ari Sigal, MLS (Catawba Valley Community College, Hickory, NC) for editorial assistance.

Appendix A. Librarians' Questionnaire

Personal Details

1. Male / Female
2. Age:
3. Education:
 - 3.1 Bachelor's degree
 - 3.2 Master's degree
 - 3.3 Professional certificate
4. Do you use smartphone?
Yes/No
5. If yes, for how long
 - 5.1 Less than half year
 - 5.2 Between 6 and 12 months
 - 5.3 Between 12 and 18 months
 - 5.4 More than 2 years
6. What is the frequency you use mobile services (during a week)
 - 6.1 Never
 - 6.2 1-5 times a week
 - 6.3 5-10 times a week
 - 6.4 More than 10 times a week

Appendix B. Librarians' Perceptions about Mobile Services

Below are statements concerning your attitudes toward the assimilation of mobile services in your organization. Please mark with X the column that describes your accordance with the following statements (1 = not at all; 7 = at a very high level)

	Statement	1. Not at All	2. Very Limited	3. Slightly	4. Almost Average Level	5. Average Level	6. More than Average	7. At a Very High Level
1	It would be easy for me to become skillful at m-technology							
2	Using m-technology will help me in the long run							
3	I believe libraries will use m-technology in the future							

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	Statement	1. Not at All	2. Very Limited	3. Slightly	4. Almost Average Level	5. Average Level	6. More than Average	7. At a Very High Level
4	I believe that using m-technology in the library will improve my work at the library							
5	I like to experiment with new information technologies							
6	I intend using m-technology in the future							
7	Among my friends, I'm the first one to try out new information technologies							
8	I believe I'll use m-technology in the future							
9	I think learning to use m-technology is very simple							
10	If I hear about a new information technology, I would look for ways to experiment with it							
11	I think that, generally, m-technology use is simple							
12	Libraries will use m-technologies in the near future							
13	I believe using m-technology will improve my work in the library and library efficiency							
14	Using m-technology helps me develop my personal future goals							
15	Using m-technology will contribute to my personal success in the future							

Appendix C. Students' Questionnaire

Personal Details

1. Male / Female
2. Age:
3. Education:
 - 3.1 Bachelor's degree
 - 3.2 Master's degree
 - 3.3 PhD
4. Do you use smartphone?
Yes/No
5. If yes, for how long
 - 5.1 Less than half year
 - 5.2 Between 6 and 12 months
 - 5.3 Between 12 and 18 months
 - 5.4 More than 2 years
6. What is the frequency you use mobile services (during a week)
 - 6.1 Never
 - 6.2 1-5 times a week
 - 6.3 5-10 times a week
 - 6.4 More than 10 times a week
7. Experience with mobile technologies
 - 7.1 I do not know what it is, I have never used it
 - 7.2 I know what it is, I have never used it
 - 7.3 I know what it is, I use it.

Appendix D. Students' Perceptions about Mobile Services

Below are statements concerning your attitudes toward the assimilation of mobile services in the library. Please mark with X the column that describes your accordance with the following statements (1 = not at all; 7 = at a very high level)

	Statement	1. Not at All	2. Very Limited	3. Slightly	4. Almost Average Level	5. Average Level	6. More than Average	7. At a Very High Level
1	It would be easy for me to become skillful at m-technology							
2	Using m-technology will help me in the long run							

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	Statement	1. Not at All	2. Very Limited	3. Slightly	4. Almost Average Level	5. Average Level	6. More than Average	7. At a Very High Level
3	I believe libraries will use m-technology in the future							
4	I believe that using m-technology in the library will improve my work at the library							
5	I like to experiment with new information technologies							
6	I intend using m-technology in the future							
7	Among my friends, I'm the first one to try out new information technologies							
8	I believe I'll use m-technology in the future							
9	I think learning to use m-technology is very simple							
10	If I hear about a new information technology, I would look for ways to experiment with it							
11	I think that, generally, m-technology use is simple							
12	Libraries will use m-technologies in the near future							
13	I believe using m-technology will improve my work in the library and library efficiency							
14	Using m-technology helps me develop my personal future goals							
15	Using m-technology will contribute to my personal success in the future							

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