

**Facilitating Conditions as predictor for the Use of Library Technology by Academic Librarians in the Federal Capital Territory, Abuja**

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## **Abstract**

The use of technology has become non-negotiable for academic libraries aiming to provide cutting edge services to their clientele. However, evidence shows that the use of technology by library personnel may depend on various factors. This study therefore investigates the influence of facilitating conditions as a predictor for the use of library technology by academic librarians in Federal Capital Territory, Abuja Nigeria. The study adopted a descriptive research survey design. The population of the study consists of all library personnel (Librarians and Library Officers) in universities in the Federal Capital Territory, Abuja. Total enumeration was used due to the size of the population. A structured questionnaire adapted from existing studies was used for data collection. The study found a moderate level of technology usage among academic librarians in the Federal Capital Territory, Nigeria (Mean = 2.96), and perceived facilitating condition (Mean = 3.14). The test of hypothesis revealed that facilitating condition ( $R^2 = 0.265$ ,  $p < 0.05$ ) have significant influence on the use of technology among the respondents. The study concluded that there are still some underlying factors that must be addressed before academic libraries in the FCT can reach the level of technology use that will enable them provide world class library services. It was therefore recommended that Universities in the FCT has work hand in hand with the management of their academic libraries to invest in relevant technologies needed in the provision of modern information service delivery

**Keywords:** Academic Libraries, Library services, Library Technology, Facilitating Conditions, Library Technology Use

**Word Count:** 237

## **Introduction**

The use of technology for library service delivery by academic libraries is important for various reasons but they may not be able to effectively use these resources due to the influence of several factors that include facilitating conditions. Academic librarians are supposed to be model professionals setting the pace for other types of libraries in the use of technology for library service delivery. Librarianship as a profession has become heavily reliant on information technology and academic libraries are expected to play a leading role in the adoption of technology in carrying out library and information services provision activities. Academic librarians are expected to be able to use library management systems, web portals, digital referencing tools, digital library applications, cloud computing and other technologies relating to library activities (Kutu, & Olajide, 2020).

The librarians can make use of technology for various purposes such as library management systems to manage both print and electronic library collection, creation of information products such as indexes and abstracts as well as rendering remote library and information services to various user groups by leveraging various technology and the internet. In addition to this, academic librarians are also expected to be able to use web portal applications to interact with other libraries in the country, cloud computing to safeguard sensitive document (Abayomi, & Ogungbeni, 2020).

In addition to the core or traditional library services for which librarians can use technology the new environment in which libraries operate means that academic librarians have to use technology for collaborating with faculty in research, teaching, and scholarship. indeed researchers have opined that traditional library services such as reference services, charging and discharging, etc. Collection management are rapidly losing their status as primary responsibilities of librarians, while new functions related to research support, data management, bibliometrics, digital initiatives, scholarly communication, and user experience are increasingly

becoming part of the academic librarians responsibilities. While librarians in many institutions have adopted some of the new functions and are in the process of reinventing their roles, others are in the early stages of doing so.

Moreover, the available evidence points to the fact that the majority of academic librarians in Nigeria are not renowned for their use of technology in carrying out their activities (Bello, & Chioma, 2020). Many librarians have been reported to abandon the technology that has been acquired at a huge cost to the library management and continue to use the manual systems despite the fact that it is slow, error-prone, and time-consuming. Many academic librarians have also failed to take advantage of several open-source software available that can make their job easier. This reluctance to adopt technologies in the provision of library and information services among academic librarians may be due to facilitating conditions that surround the use of technology among librarians

Facilitating condition is a construct from the Unified Theory of Acceptance and Use of Technology (UTAUT), one of the popular models used to measure the likelihood of technology acceptance and use among various categories of people. Facilitating conditions measure the perception of potential technology users regarding the availability of necessary facilities, technical support, and personal skills required to make use of new technology. This means that facilitating conditions in the context of academic librarians refers to their perception of necessary infrastructure, technical support, and training opportunities that have been put in place by academic libraries to make it easy for their personnel to make use of relevant library technology for the provision of library and information services in academic libraries. Perhaps the key among the three construct of facilitating conditions as outlined in this study is the perception of the available infrastructural support.

### **Statement of the Problem**

Technology use by librarians is no longer a debatable issue as ICT has permeated key aspects of the information profession. The use of technology enhances information access, effective information resources management, and improved prestige for librarians who would be seen by their clients as very relevant. As a result, when librarians continue with the manual services, it makes it impossible to render innovative and beneficial services that libraries are set up to render. It also portrays the library as archaic, ineffective, and irrelevant. This has made the use of technology a popular subject for researchers around the world.

However, while researchers have evaluated the use of technology by librarians in other types of libraries such as academic, special, school, and research libraries, the academic libraries in Federal Capital Territory, Nigeria, have not received the expected level of attention from researchers. In line with this, the study seeks to examine the use of library technologies by academic librarians in the Federal Capital Territory, Abuja Nigeria.

### **Research Questions**

These research questions guided the study.

1. What is the level of use of library technology among academic librarians in the Federal Capital Territory, Abuja Nigeria?
2. What are the facilitating conditions for the use of library technology among academic librarians in the Federal Capital Territory, Abuja Nigeria?

### **Hypothesis**

1. Facilitating Condition will not have significant influence on use of technology among academic librarians in the Federal Capital Territory, Abuja, Nig

### **Literature Review**

The use of technology in library management starts right at the doorstep of the library. One of the technology users get in contact with first in the library is the radio frequency identifier

(RFID). This technology is used mainly to prevent theft of library resources and can also be used on self-checkout in some libraries. However, researchers examined how two private colleges in Abuja, Nigeria, employ Radio Frequency Identification (RFID) technology for library theft detection. The findings revealed that all library infrastructure—including RFID labels, readers, portable readers, servers, antennas, the RFID label printer, and the external book return kiosk—was in place and operational in the two libraries. The researcher however pointed out that not many universities are using technologies such as RFID to safeguard their information resources (Amanyi, Akor, & Madu, 2018).

Facilitating conditions literarily means the existence of conditions that facilitates or encourage the achievement of an objective. As a construct of the Unified Theory of Acceptance and Use of Technology (UTAUT), it is used to describe "the extent to which a person feels that the organizational and technological infrastructure exists to enable usage of a particular technology" especially one that they are not used to previously (Hamzat, & Mabawonku, 2018). It is a matter of perception on the part of the technology user in which they subjectively determine whether they can have access to the necessary infrastructure, technical support and training to enable them effectively make use of the new technology they are just being introduced to.

People, including the availability of adequate resources and assistance for individuals to make use of technology are examples of enabling conditions. An individual's reluctance to adopt a technology may stem from a number of factors, including inadequate support, inadequate knowledge, a lack of resources, and a lack of timely help (Kamaghe,, Luhanga, & Michael, 2020). This means that when library personnel perceives no support in their bid to use technology, they may be reluctant to use it. On the other hand, when the support is there, they are more likely to make use of the technology. This seems to hold true irrespective of the complexity of the technology.

Studies on technology adoption have shown that the decision to adopt a particular technology by any user all over the world is not random. Technology users usually put a lot of consideration into the decision to accept a technology that they have not been using previously. The acceptance and use of technology by various categories of users according to the UTAUT is based on the existence of enabling environment or facilitating conditions. Studies have therefore been conducted to measure the real impact of facilitating conditions on the use of various types of technology among various categories of users, including librarians from all over the world. Several studies has been done to understand the relationship as well as the interdependencies between facilitating conditions and use of technology. An study found that facilitating condition has an insignificant direct impact on technology use among the respondents. this means that facilitating condition has an effect on behavioural intention to use technology which in itself is directly related to the use of relevant technologies (Satar, &Alarifi, 2022). This finding was also replicated by studies in other locations. Another study findings demonstrates that facilitating conditions significantly affect the intention of the students to continue using the educational management platform ( $t= 6.312$ ;  $p = 0.001$ ) (Kamarozaman, & Razak, 2021). Another research conducted in Indonesia delves into the habits of users and the enabling variables that contribute to the success of Indonesia's Online Learning Platforms (OLPs).The findings revealed that there was a statistically significant correlation between facilitating conditions and the intention to behave in a certain way. This result is primarily attributable to the availability of resources required for adopting OLP technology. Infrastructures such as pervasive Internet success, mobile device accessibility, and reasonable file sizes that influence download times all contribute to the accessibility of these publications (Ambarwati, Harja, & Thamrin, 2020).

## **Methodology**

The study adopted a descriptive research survey design. The population of the study consists of all library personnel (Librarians and Library Officers) in universities in the Federal Capital Territory, Abuja. The universities include (name of unis). Total enumeration was used due to the size of the population. A structured questionnaire with a Cronbach alpha of 0.97 was adapted from existing studies and used for data collection. Data gathered was analyzed using descriptive statistics. The hypothesis was tested using inferential statistics.

### **Discussion of Findings**

From the demographic data collection, majority of respondents are affiliated with University of Abuja (35.2%), followed by respondents from NILE, and BAZE Universities with (17.6%) respectively. Others are from Veritas University (15.4%) and African University of Science & Technology(14.3%). Moreso, females constitute a larger proportion (59.3%) compared to males (40.7%). This underscores the importance of considering gender-related factors in further analyses and decision-making processes. age For the age distribution the highest representation is 30-34 age group (39.6%), followed by the 35-39 age group(36.3%).The inclusion of individuals aged 45and above (4.4%) suggests diversity in terms of experience and possibly different stages of career development. Majority of respondents (90.1%) hold a master's degree. Additionally, a smaller percentage holds PhDs (3.3%), while Bachelor of Science (BSC) and Master of Philosophy (MPhil) holders each makeup 5.5%and1.1%, respectively. This distribution reflects a well-educated sample with a wide range of qualifications. The departmental distribution also indicate that Reader Services department has the highest representation (33%), followed closely by the cataloguing and classification department (22%). Other departments' represented in the study include Reference (27.5%), E-library (8.8%), and Others (4.4%) this distribution underscores the diversity of roles and responsibilities within the study sample.



**Research Question One:**

What is the level of use of library technology among academic librarians in the Federal Capital Territory, Nigeria?

**Table 1: Level of Use of Library Technology among Academic Librarians in the Federal Capital Territory, Nigeria**

Frequency of Use	SA	A	D	SD	Mean
I make use of library technology daily	38 (41.8%)	32 (35.2%)	--	21 (23.1%)	2.96
I make use of library technology Twice a week	31 (34.1%)	36 (39.6%)	17 (18.7%)	7 (7.7 %)	3.00
I make use of library technology weekly	21 (23.1%)	35 (38.5%)	8 (8.8%)	27 (29.7%)	2.55
I make use of library technology monthly	22 (24.2%)	54 (59.3%)	15 (16.0%)	--	3.08
I never make use of Library Technology	29 (31.9%)	38 (41.8%)	24 (26.4%)	--	3.05
<b>Weighted Mean</b>					<b>2.93</b>
Purpose of Use					
I use library technology to Organize library resources	21 (23.1%)	51 (56.0%)	-	19 (20.9%)	2.81
I use library technology to source For library resources	23 (25.3%)	61 (67.0%)	--	7 (7.7 %)	3.10
I use library technology to render Reference services	19 (20.9%)	62 (68.1%)	10 (11.0%)	( %)	3.10
I use library technology to Preserve information resources	32 (35.2%)	51 (56.0%)	3 (3.3%)	5 (5.5%)	3.21
I use library technology for Charging and discharging library materials	19 (20.9%)	39 (42.9%)	12 (13.2%)	21 (23.1%)	2.62
I use library technology to engage In inter library loan	20 (22.0%)	19 (20.9%)	--	52 (57.1%)	2.13

I use library technology to organize information literacy programs	39 (42.9%)	32 (35.2%)	--	18 (19.8%)	3.03
<b>Weighted Mean</b>					<b>3.00</b>
<b>Aggregate Mean</b>					<b>2.96</b>

**Decision Rule** 0.1 –1.9= verylow;2.0 -2.49=low; 2.5-2.99 =moderate; 3.0-4.0= high;and3.5- 4.0= very high Key: SA = Strongly Agree; A= Agree; D = Disagree; SD = Strongly Disagree.

According to table 1 above, the weighted mean of frequency of use “2.93” indicates a moderate frequency of use of library technology. The weighted mean score of 3.0. shows a high level usage of technology among librarians. Moreover, the aggregate mean score across all statements is 2.96, indicating a moderate level of technology usage among academic librarians in the Federal Capital Territory, Nigeria.

### Researcher Question Two

What is the level of facilitating conditions for the use of library technology among academic librarians in the Federal Capital Territory, Nigeria?

**Table 2: Facilitating Conditions for the Use of Library Technology among Academic Librarians in the Federal Capital Territory, Nigeria**

Facilitating Condition	SA	A	D	SD	Mean
<b>Infrastructure Support</b>					
I have access to resources such as laptops, mobile phones etc. to support my use of the library technology	40 (44.0%)	36 (39.6%)	--	15 (16.5%)	3.27
My library provides a stable internet connection that makes it possible to use library technology	40 (44.0%)	45 (49.5%)	-	6 (6.6 %)	3.37
My library provides a stable electricity that makes it possible to use library technology	40 (44.0%)	36 (39.6%)	7 (7.7 %)	8 (8.8 %)	3.19
<b>Weighted Mean</b>					<b>3.27</b>

<b>Technical Support</b>						<b>Dec</b>
My library's policy is clear on the use of library technology	26 (28.6%)	56 (61.5%)	--	9 (9.9%)	3.19	<b>isio</b>
My library has employed IT experts to solve any problems with hardware and software	29 (31.9%)	45 (49.5%)	11 (12.1%)	6 (6.6%)	3.07	<b>n</b>
Used for library services						<b>Rul</b>
There are other librarian who are expert who can assist me in the use of ICT	19 (20.9%)	39 (42.9%)	12 (13.2%)	21 (23.1%)	2.98	<b>e</b>
<b>Weighted mean</b>					<b>3.08</b>	<b>0.1–</b>
<b>Training and Development</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>	<b>Mean</b>	<b>=ve</b>
I have the support to acquire training in the use of library technology	31 (34.1%)	41 (45.1%)	5 (5.5%)	14 (15.4%)	3.19	<b>rylo</b>
I have access to mentors who can help me in the use of library technology	55 (60.4%)	25 (27.5%)	--	11 (12.1%)	3.07	<b>w;2.</b>
My library provides financial support for those who acquire digital skills for the use of library technology	37 (40.7%)	39 (42.9%)	12 (13.2%)	3 (3.3%)	2.98	<b>0-</b>
<b>Weighted Mean</b>					<b>3.08</b>	<b>2.49</b>
<b>Aggregate Mean</b>					<b>3.14</b>	<b>=lo</b>

ate;3.0-4.9=high;and3.5- 4.0= very high Key: SA = Strongly Agree; A= Agree; D = Disagree; SD = Strongly Disagree.

Table two above showed a weighted mean score of 3.27, 3.08 and 3.08 indicated a high level enjoyment of infrastructural support, technical support and training support by librarians in academic, Abuja, Nigeria in the use of technological innovations.

### Test of Hypothesis

**Table 3: Influence of Facilitating Conditions on the use of Library Technology by Academic Librarians in Federal Capital Territory, Nigeria**

**Model Summary**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.522 <sup>a</sup>	.273	.265		3.65167

a. Predictors: (Constant), Facilitating Conditions

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	450.312	1	450.312	33.770	.000 <sup>b</sup>
	Residual	1200.123	90	13.335		
	Total	1650.435	91			

a. Dependent Variable: Library Technology Use

b. Predictors: (Constant), Facilitating Conditions

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	23.828	3.470		6.867	.000
Facilitating Conditions	.468	.081	.522	5.811	.000

Source: Researcher's Fieldwork 2023

a. Dependent Variable: Library Technology Use

From the model summary, it is clear that facilitating conditions has a positive significant relationship with the use of library technology by academic librarians in Federal Capital Territory, Nigeria ( $R = 0.522$ ,  $p < 0.05$ ). The coefficient of determination (Adj.  $R^2$ ) of 0.273 shows that facilitating conditions explains 27.3% of the use of library technology by academic

librarians in Federal Capital Territory, Nigeria, while the remaining 72.7% variation is explained by other variables not investigated in this study. On the strength of this result ( $\text{Adj. } R^2 = 0.273$ ,  $F(1, 90) = 33.770$ ,  $p = 0.000$ ), this study rejects the null hypothesis which states that there will be no significant influence of facilitating conditions on the use of library technology by academic librarians in Federal Capital Territory, Nigeria.

### **Discussion of Findings**

A group of researchers from Malaysia presented a basic model derived from the literature on information systems (IS) and user behaviour in order to analyse how ease-of-use influences users' propensity to remain loyal to the online educational management platform. The findings demonstrate that facilitating conditions significantly affect the intention of the students to continue using the educational management platform (Ambarwati, Harja, & Thamrin, 2020). The researchers interpreted the implication of this finding to mean that developers of information systems must ensure that they attain full comprehension of facilitating conditions and their subsequent impact on the continuation intention to use any technology they are introducing. Equally important for providers of information systems is enhancing users' impressions and, thus, adoption of the technology.

Another research conducted in pointed out that the successful implementation and maximum benefit from educational technology depend on students' comfort with and use of the technology. The findings revealed that there was a statistically significant correlation between facilitating conditions and the intention to behave in a certain way. This result is primarily attributable to the availability of resources required for adopting OLP technology. Infrastructures such as pervasive Internet success, mobile device accessibility, and reasonable file sizes that influence download times all contribute to the accessibility of these publications (Yeh, & Tseng, 2017).

This was further confirmed in another study conducted in Taiwan to investigate the influence of factors like performance expectancy, effort expectancy, and facilitating environments on the behavioural intention of using mobile payments among college students. The study found that the likelihood of making a mobile payment is positively related to facilitating conditions (Chaka, & Govender, 2020). The study concluded that, unless stakeholders put structure in place to ensure easy access to and use of technology, the technology may not gain wide acceptance. Similar findings were reported in African studies, particularly by Nigerian scholars

In a related study conducted in Nigeria's North Central Geo-Political Zone, researchers found that respondents' performance expectations, effort expectations, and facilitating conditions substantially influenced their intention to employ mobile learning. The authors concluded that the facilitating conditions available in the user's environments are crucial to student preparation and acceptance of mobile learning (Izuagbe, Ibrahim, Ogiamen, Olawoyin, Nwokeoma, Ilo, & Osayande, 2019). This was further confirmed in an experimental study that focused on the actual user experience.

The use of technology can be enhanced or hindered by the experience of the use. In some cases, even when all the facilitating conditions are available, some may not be able to use the technology while others will be able to use it even when they have to figure everything out by themselves. This was demonstrated in a study conducted by Nigerian scholars. According to the findings, librarians' ICT skill is an important predictor of their propensity to embrace new technologies. When librarians' ICT skill are lacking, they are more likely to find the use of technology difficult which will drastically restrict their ability to adopt library technology (Alabi, & Mutula, 2020).

The hypothesis of the study found a significant influence of facilitating conditions on the use of library technology by academic librarians in Federal Capital Territory, Nigeria. This finding has

precedents in literature although there are also other studies that suggests otherwise. Researchers in Saudi Arabia found that facilitating condition has an insignificant direct impact on technology use among the respondents. This means that facilitating condition has an effect on behavioural intention to use technology which in itself is directly related to the use of relevant technologies (Kamarozaman, & Razak, 2021). This finding was also replicated by studies in other locations.

Another study also investigates what factors influence the willingness of lecturers at Nigeria's public and private universities to incorporate ICTs into their classroom instruction. The regression analysis revealed that only facilitating conditions significantly influenced the implementation of ICT in the classroom. However, at Covenant University, the usage of ICT by faculty is significantly influenced by both effort expectancy. The researchers concluded that the success of technology usage in academic environments is dependent on the availability of relevant institutional policy, technological infrastructure, ease of use, funding, and organizational support (Babatunde, Alhassan, & Babalola, 2020).

## **Conclusion**

The use of technology has become non-negotiable in any profession. For the information services providers such as academic librarians, technology use is a necessary act which is closely linked to how effective and efficient they are in the provision of library services. The pervasive nature of technology in the information age means that academic libraries would only be able to provide a limited range of services without the use of technology. It is therefore surprising to see only a moderate use of technology in Nigerian libraries. This study has shown that there are still some underlying factors that must be addressed before these libraries can reach the level of technology use that will enable them provide world class library services to students and lecturers, two users groups who have shown interest in accessing fast, accurate, and relevant information resources with the least effort possible.

## **Recommendations**

Based on the findings and conclusions reached in this study, the following recommendations are considered appropriate;

1. Universities in the FCT has work hand in hand with the management of their academic libraries to invest in relevant technologies needed in the provision of modern information services.
2. There is a need for better employee motivation so that library personnel would be self-driven and take the initiative to make use of relevant technologies in their various tasks.
3. While the study indicates a high level of facilitating condition to enable the use of library technology, there are also reports of lack of adequate computers and other devices .It is therefore recommended that the libraries develop innovative means of attracting financial and material support to acquire necessary technology equipment even beyond the regular allocation from the university.



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