
Comparative Study of Virtual Methods Used for Library Service Delivery among Librarians in Southern Nigeria Private Universities

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ABSTRACT

This study examined the virtual methods of service delivery being deployed by librarians in private universities in Nigeria. The objective of the study was to analyse the virtual methods of service delivery among librarians and determine the predominant method used among the librarians. Survey research design was adopted for the study. Total enumeration technique was adopted for the study. A population of 181 librarians from 45 private universities in Southern Nigeria were involved. Data were gathered, analysed and presented using frequency counts, percentages, mean and standard deviation. The study found that librarians used different virtual methods of service delivery. Library website 157 (90%) and e-mail 132 (76.3%) were the prominent electronic media used by librarians while Facebook 59 (34%) and Whatsapp 57 (32.9%) were the predominant social media platforms applied for service delivery by librarians. Electronic media were more used for latest publications arrival, as well as library education and document delivery services while social media were more used for reference services and selective dissemination of information. In conclusion, virtual methods of service delivery were deployed by librarians in private universities for service delivery. In comparing the virtual methods, librarians used more of electronic media than social media to deliver services to their users. Therefore, electronic media were predominantly used than social media, many of the virtual methods were found to be underutilised while recommendations were proffered.

1. Introduction

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Information professionals are trained personnel found in the public and private organisations or institutions who provide solicited and unsolicited information services to their users. There are different services rendered to users by librarians. These services include patron registration, reference services, outreach services, current awareness services, library orientation and library development notification among others (Abubakar, 2011; Ilesanmi, 2013; Mamudu & Otulugbu, 2014). These services can be rendered to users through conventional and virtual methods. Conventional methods are means by which library services are rendered through traditional methods such as face to face, notice board, flyers and display racks among others. Virtual method of service delivery involves the application of information and communication technology (ICT) based system such as telephone/mobile phone calls, text messages, electronic mail, electronic billboard, Teleconferencing, Whatsapp, Facebook and Google to mention but a few as noted by (Omekwu & Eruvme, 2014; Quadri, Quadri, & Oluwasina, 2015; Ilesanmi & Mabawonku, 2020), hence, the need for very good network, devices to work with and steady electricity supply. Jantz (2012) affirmed that innovative library service delivery cannot be overemphasised as the application of ICT has contributed immensely to the achievements and development of novel services and delivery.

Librarians utilise some methods to deliver various services such as electronic document delivery and virtual reference services (Ola, 2010; Ajala & Ojo, 2011) to their users. Study by Ubofoung and Popoola (2014) established that librarians were involved in the business of service delivery to their patrons. Virtual services are rendered to users remotely with the aid of information and communication technology infrastructure and devices which require the supply of steady electricity. Virtual services could be rendered to users irrespective of their location especially where technological infrastructure such as computers, smart/android phones, internet/intranet, wireless/local area network connections are available and accessible to achieve timely services delivery. Scholars like Dahan, Taib, Zainudin, and Ismail (2016) have established the importance of the application of information and communication technology to quality library service delivery thus, ICT serves as the bedrock of innovative and quality library services achievement. Ilesanmi and Ojo (2016) emphasised the need for good and accessible networks and broadband internet connectivity for use among librarians and their students. In the university setting, the university library management as well as librarians are inclusive and are expected to support the teaching, learning and the community service of the institution served.

University libraries are established to complement the goals and aspirations of the institutions in order to achieve the purpose for which university system is being established. University libraries in both developed and developing countries are renegeing on their efforts to deliver tandem and prompt services to both the students and staff of their institutions regardless of their location and time. Due to demand for higher education by the potential students and the ability to meet the demand brought about the establishment of private universities in Nigeria. Private universities are universities owned by individuals and religious bodies. Private universities in Nigeria run various programmes that are approved by the National Universities Commission (NUC). Hence, it is mandatory by the NUC that for any university to be established and accredited, there must be standard academic libraries with qualified librarians who will render services to the library users, lecturers, researchers as well as

the university community at large. Therefore, private university libraries are expected to develop collections in support of these programmes, organise the knowledge and disseminate to their clientele.

1.1 Statement of the Problem

Librarians are saddled with the responsibilities of ensuring that users' information needs are promptly attended to through various methods of service delivery. Extant literature revealed that librarians used conventional methods for service delivery (Alabi, Nduka, & Olatise, 2011). However, it was observed that the application of virtual methods: electronic and social media for service delivery among librarians in Nigeria is scarce. Hence, the need to study virtual methods of service delivery to ascertain the relevance of electronic and social media use in recent times as this study intends to fill this gap. The study therefore investigates the use of electronic and social media for service delivery by librarians in private universities in Southern Nigeria. There is therefore the need for comparative study among the variables.

1.2 Objectives of the study

The objectives of the study are to:

- 1) find out the type of library services rendered by librarians in the private universities in Southern Nigeria;
- 2) determine the frequency of services delivery by librarians in the private universities in Southern Nigeria;
- 3) examine the virtual methods of library service delivery by librarians in the private universities in Southern Nigeria and
- 4) determine the virtual modes predominantly used by librarians for service delivery in private universities in Southern Nigeria.

2. Literature Review

2.1 Services Rendered by Librarians in the Universities

There are different information needs of library users in which the librarians are to provide solution to. Librarians are proactive in their services to ensure that information needs of the users are met. Madhusudhan and Nagabhushanam (2012) reported that information professionals render services such as electronic selective dissemination of information, online reference services, electronic document delivery, electronic research guides and online current awareness among others to their users. In a study conducted by Smeaton and Davis (2014), it was found that information literacy programme was part of library services been delivered to patrons through social technologies.

Alabi, Nduka, and Olatise (2011) investigated the types of services rendered by librarians and the mode by which these services are delivered in some tertiary libraries in Nigeria. The study

employed a survey research design. The study involved 13 higher institution libraries in the Southwestern Nigeria. Data were collected with the use of questionnaire. Data analysed were presented in frequency count, percentage and mean. Findings of their study revealed that six were female while 14 were male. The vast majority of those who responded had eleven to fifteen years of work experience while the least had one to five years of work experience. Furthermore, according to the findings, many of the participants 38% claimed that they had provided library orientation, followed by 31% who had provided library education programs; 23 had attested to having trained on electronic resources; and very few of the respondents 6% had provided library outreach services. Ola, (2010); Knepp, White, and McCormack (2011); Eke and Ekwelem (2014); and Luo, (2015) affirmed that reference service was rendered by librarians in the institutions studied.

Furthermore, Ajala, and Ojo (2014)'s study submitted that electronic document delivery was among the services rendered by the librarians. Other services include, reservation of information resources, charging and discharging of open shelves library resources, library registration, library orientation. Nnadozie (2016) carried out a study on information services provision to some tertiary institutions clientele. The findings of the author's research established that librarians rendered services such as document delivery, document printing, data processing and retrieval, electronic resources downloads, email service and internet call service to their users. As technologies continue to evolve and positive perception of such is recorded, many more services in academic libraries would be virtually inclined while the information professionals would embrace its application.

Rendering of services to the users are not limited to the users services librarians alone but technical services librarians and collection development librarians were also involved in ensuring that information services are regularly and timely disseminated to the library users Madhusudhan and Nagabhusanam (2012); Quadri and Idowu (2016). Opeke and Onuoha (2013) studied the librarians' mode of disseminating information to their users and they found that librarians from different sections of the libraries studies participated in the dissemination of different library services to their patrons.

In the same vein, Ilesanmi and Mabawonku (2020)'s research reported that librarians from other sections of the library been referred to as the back of the scene such as collection development, information technology and cataloguing among others got involved in library service delivery to their clientele. This could be inferred to the fact that they are multi-skilled and they handled multi-task due to the training received from library schools, industrial trainings, exchange programmes, workshops, conferences attendance, in-house training and self-skill acquisition that cut across different aspects of the profession which in turn made the librarians to be relevant at any point in time in performing their tasks.

2.2 Virtual Methods of Service Delivery in the University Libraries

Library products and services are geared toward the clientele. These users could be face-to-face i.e physically present in the library or remote users. The users are to be notified by the librarians of the library services that are available for their use. There are different methods by which the librarians notify and deliver the available products and services to their users. This paper is focused on the use of virtual methods of delivering various services to the library users. Virtual methods

means the application of information and communication technology to the library's operational activities, notification and delivery of library products and services to the users without physical contact. Among these virtual methods are Telephone/mobile call, phone sms/text message, email, e-bulletin, e-noticeboard, live-chat, library website, e-reference, social media platforms such as Whatsapp, Facebook, Printrest, Podcast, Twitter, Telegram, Google, and Flickr. The above mentioned virtual methods work in different capacities to ensure that library activities and services are timely rendered to the users in their various locations. Madhusudhan and Nagabhushanam (2012) opined that library website and email were among the methods used by librarians to deliver services to their users. Furthermore, Omekwu and Eruvme (2014); Quadri, Quadri, and Oluwasina (2015); Ilesanmi and Ojo (2016) affirmed that ICT have benefits with great extent in the way librarians discharged library services to their users.

Ezeani (2011) studied facilities provision and use by librarians for service delivery in a Nigerian university. She adopted survey research design for the research. The method employed was total enumeration while the instrument used for data collection was a questionnaire. Data gathered were analysed and presented using frequency counts, percentages, mean, standard deviation, and inferential statistical method. Findings showed that there was adequate provision for the Internet facilities in the library as librarians used the Internet to communicate their users for service delivery. Her findings also revealed that e-mail was used by a significant number of librarians in the university studied for various library services delivery. Mabawonku (2017) argued that library service delivery to the users is technology-driven and many libraries and their librarians have deployed the use of different technologies including computers, mobile applications e-mail and social media platforms to disseminate information to the users.

In an empirical studies carried out by Adams and Bonk (1995); Mbofung (2014), they reported that phone calls and email were part of the methods of information dissemination deployed by librarians to meet the library users' needs. Salt (2004) also affirmed the use of web based channels of communication to reach their library users and satisfying their information needs. Cohen (2011) defined social media as web based platform that involves online participation, and content creation among users. She further highlighted the following eight characteristics of social media as: content in various formats, cross reference of different platforms, different levels of engagement by users, high speed and breadth of information dissemination, multi-communication patterns, real time communication, use of different devices (laptop, desktop, smartphone, I-pad, etc.), and creation of real - time online events.

The use of social media should be optimally embraced by librarians to deliver effective services to the staff and students in the universities in Nigeria. Opeke and Onuoha (2013) studied the librarians' mode of disseminating information to their users and they found that majority of the librarians used social media platforms for this purpose. Seventy-six per cent of the participants used social media platforms to disseminate different library services to their users, out of which 28% interacted with their users on the social media platforms. Also, Quadri and Idowu (2016) researched on the use of social media for information dissemination. Survey research method was deployed for the study. Among the information professionals' in the three universities studied, their findings revealed that majority of the librarians were aware of social media tools such as Facebook, Google+, Youtube,

Twitter, Skype, LinkedIn and Blog among others and have embraced their use for disseminating information to library users.

With the emergence of social technologies, information professionals in this dispensation have up-skilled to meet with the information age demands. Hence the adoption of social technologies by librarians for library services delivery to their users. Social technologies are the technology-enabled social tools such as social media platforms that made real time interaction and immediate exchange of information, live programmes and file attachments regardless of time and location. Some of the examples of the social media platforms are Facebook, Twitter, Whatsapp, Telegram, and Youtube among others. Studies pertaining to adoption of social media by library professionals for information dissemination have been conducted in different parts of the world. Aharony and Bronstein (2014) conducted a study in Israel and their findings affirmed the relevance of the application of social media to information literacy programmes been carried out by their information professionals.

Monagle and Finnegan (2018) researched on the application of social media among some new information professionals in the United Kingdom and Ireland. Their result revealed that the respondents used Twitter, Facebook, Google+ and LinkedIn for library service delivery. Weerasinghe and Hindagolla (2018)'s study from Sri Lanka also submitted that the use of Facebook was very high with 90% of the respondents' usage for dissemination of information while the use of LinkedIn was at moderate level with 55% of the respondents that claimed its usage. The study by Khasheli and Siddiqui (2022) on librarians use of social media in Pakistan also noted that Facebook, Youtube and Whatsapp was highly used by the participants of their study.

In a study conducted by Bhardwaj (2014) on the application of social media by librarians, results revealed that social media application among librarians was for personal engagements and professional development like meeting friends and family, upcoming conferences to mention a few. Among librarians studied by Tyagi (2012), he found that librarians had knowledge of social media but its use was more towards personal lives. Singha and Sarmah (2015) study of two university libraries in India revealed high level of social media awareness among the librarians. The authors' findings further revealed that librarians studied were more familiar with blog, wiki and RSS feed among the social medial tools. Other findings revealed that very high percentage 86% of the librarians indicated that social media was used to deliver library services.

A study in Nigeria by Anyaoku, Orakpor, and Ezejiofor (2012) confirmed the awareness and use of social media platforms. However, their report found that out of the total respondents, the minority claimed the usage of Facebook, RSS feed, Wiki and few other social media platforms for the dissemination of information to users. Alabi et al. (2011)'s study also listed some methods of service delivery among the librarians studied in which they indicated the methods that was used for service delivery. It was found that library services were more delivered through conventional methods than virtual methods. The result also revealed that more than half of the respondents' 55% claimed that they had never used Facebook and Twitter to deliver library services.

On the contrary, a study was conducted by Kabir and Efe (2022) in Nigeria on social media applications in a Northern university library setting. They found that Facebook - 95.1%, Whatsapp - 94.1%, Twitter - 85.3% and Google+ - 83.3% were very highly used by professional librarians of the studied university. Their findings have showed that librarians are using social media for

information dissemination. Quadri and Idowu (2016) examined the application of social media to disseminate information and found that 68.7% respondents used Facebook and 50% respondents used Google+ for information dissemination. Current awareness service – 73.3% respondents, and reference services – 63.3% respondents were indicated as services mostly provided with the tools while other services like library orientation and selective dissemination of information were averagely disseminated through the social media tools. In a similar study, Akporhonor and Endouware (2016) studied social media and their findings revealed that librarians in some federal, state and non-governmental tertiary institutions in the east and west of Nigeria often made use of Facebook, YouTube, twitter and instant messaging while they claimed not to have used Friend star, Flickr, Photo bucket and Delicious.

Studies by Weerasinghe and Hindagolla (2018); Quadri and Idowu (2016); Kabir and Efe (2022) have established very high and high frequency delivery of services by librarians to their users with the use of some social media tools while some recorded moderate frequency involvement in library service delivery hence, librarians were engaged in daily, weekly and occasionally service delivery with the application of social medial tools as recorded. Baro, Idiodi and Godfrey (2013) study on Web 2.0 technologies (Facebook, Flickr, YouTube, Instant messaging, Blogs, Wikis, RSS feeds, Podcasts, Social bookmarks and Twitter) use among librarians in Nigeria revealed that majority of the respondents often deliver library services with the use of Facebook and Twitter. Singha and Sarmah (2015) reported that larger percent of the respondents performed users related services with the use of social media tools such as Blog in the two universities studied in India, professionals in one of the universities claimed occasional use of Wiki, RSS feed, only few respondents from one of the two universities used Instant Messaging (IM) for library and information service delivery while none of the respondents from the second university applied IM for service delivery. Neither of the two universities respondents used Podcast for service delivery. Furthermore, findings of Adams and Bonk (1995) revealed high frequency rate of service delivery by librarians to the faculty members with the application of email of the institutions studied.

Extant literature in recent times Akporhonor and Endouware (2016); Weerasinghe and Hindagolla (2018); Monagle and Finnegan (2018); Khasheli and Siddiqui (2022); Kabir and Efe (2022) have revealed more application of social media to service delivery in university libraries globally, especially during COVID-19 pandemic while other electronic media use was not noticed Ajala and Ojo (2011); Madhusudhan and Nagabhushanam (2012); Mbofung (2014); Nnadozie's (2016). Therefore, the use of social media was highly used than other electronic media for disseminating library and information services.

2.3 Theoretical Framework

The study is anchored on Media Richness Theory (MRT) propounded by Daft and Lengel (1984). The theory was centred on the richness of the media and its ability to communicate or convey understanding to another person without loss or distortion of such information. The rationale of the MRT for this study was based on its relevance to the application of different methods of service delivery among librarians to their potential users. This study focuses on virtual media through which

librarians communicate information to their users without loss or extortion.

3. Methodology

3.1 Research design

The study adopted descriptive survey design. This is due to its acceptability in the humanity research globally (Jaiyeoba and Salami, 2006). This assertion is also applicable to research in the field of Library and Information Science (LIS). Study by Adams and Bonk (1995) corroborate the use of survey design in the field of LIS. Total enumeration technique was adopted for this study. One hundred and eighty-one librarians constituted the population of the study. Questionnaire was the instrument used to gather data for the study. The instrument was structured and tagged 'Library Service Delivery by Librarians Questionnaire'. The instrument was modified, validated and applied to the study based on LibQUAL model which centered on ensuring effective and efficient service delivery by librarians. This model was adapted and used by Dahan, Taib, Zainudin and Ismail (2016). The instrument was personally administered to the participants and collected by the researcher and two research assistants.

3.2 Population

The population of the study were librarians in all the 45 private universities in Southern Nigeria. They were 181 in number. All the head of libraries were excluded in the study because they were engaged in university administrative duties.

Table 1 presents the names, number of universities covered and librarians involved by the geographical zone of the region studied.

Table 1. Distribution of private universities and librarians in Southern Nigeria

Zone and Name of University	No. of university	No. of librarian
South-east	8	25
Name of University:		
Caritas University		
Evangel University		
Gregory University		
Godfrey Okoye University		
Madonna University		
Paul University		
Renaissance University		
Rhema University		

Zone and Name of University	No. of university	No. of librarian
South-south	8	33
Name of University:		
Benson Idahosa University		
Igbinedion University		
Novena University		
Obong University		
Ritman University		
Samuel Adegboyega University		
Wellspring University		
Western Delta University		
South-west	29	123
Name of University:		
Achievers University		
Adeleke University		
Afe Babalola University		
Ajayi Crowther University		
Augustine University		
Babcock University		
Bells University of Technology		
Bowen University		
Caleb University		
Chrisland University		
Christopher University		
Covenant University		
Crawford University		
Crescent University		
Dominican University		
Elizade University		
Fountain University		
Hallmark University		
Joseph Ayo Babalola University		
Kings University		
Koladaisi University		
Lead City University		
Mcperson University		
Mountain Top University		
Oduduwa University		
Pan-Atlantic University		
Redeemer's University		
Southwestern University		
Wesley University of Science & Technology		
Total	45	181

3.3 Method of data analysis

Quantitative data analysis technique was deployed for the study. Data collected were analysed using Statistical Package for the Social Sciences (SPSS) software version 21 and results were presented in frequency counts, percentages, mean, and standard deviation.

4. Results

In all, a total of 173 (95.6%) respondents were returned and found usable for the study. The findings of this study are the under listed tables, frequency counts, percentages, mean and standard deviation in order to provide answers to the objectives of the study. Table 2 presents the return rate of the administered questionnaire.

Response Rate

Table 2. Distribution of private universities and librarians' response in Southern Nigeria

Zone	No. of university	No. of librarians and administered questionnaire	No. of copies returned
South-east	8	25	24
South-south	8	33	30
South-west	29	123	119
Total	45	181	173 (95.5%)

Table 3 presents the demographic characteristics of the participants. The result from the gender distribution revealed that there was a slight male dominance of librarians with population of 88 (51%) over female librarians population of 85 (49%) in the private universities studied. On marital status, the 77% respondents were married while 2.3% were widows and widowers. According to age distribution, the result shows that majority of the librarians in age bracket 25-35 years dominated the population of 67 (38.7%), closely followed by 65 (37.6%) within the age bracket of 36-45 years while age bracket of 56-65 years i.e 10 (5.8%) constitutes the minority. Regarding the status of the respondents, it was found that many of the respondents were at the status of Assistance Librarian with population of 53 (30.7%), followed closely by 49 (28.3%) in Librarian II status while Deputy University Librarians which constitute the minority were 3 (1.7%).

Concerning the respondents' designation, the result shows that majority of them were cataloguers with 37 (21.4%), followed by circulation librarians with 32 (18.5%) while the least of the respondents were Institutional Repository Librarian with 2 (1.2%). In respect to the qualifications of the respondents, it was recorded that majority of them (129;75%) had Master degree, some of them had Postgraduate Diploma while a few (7;4%) had Doctoral degree. As regards years of working experience, the result revealed that 78 (45%) of the participants have spent at least ten years on the job, followed by some of the librarians who have spent the last five years were 57 (33%) while only 6 (4%) have put in between 31 and 35 years into the service of their institutions.

Table 3. Demographic information of librarians in Private universities

Background Information Categories	Librarians n=173	%

Background Information	Categories	Librarians n=173	%
Gender	Male	88	51
	Female	85	49
Marital status	Married	133	76.9
	Single	36	20.8
	Widow	3	1.7
	Widower	1	0.6
Age	25 - 35	67	38.7
	36 - 45	65	37.6
	46 - 55	31	17.9
	56 - 65	10	5.8
Status	Deputy University Librarian	3	1.7
	Principal Librarian	9	5.2
	Senior Librarian	17	9.8
	Librarian I	42	24.3
	Librarian II	49	28.3
	Assistant Librarian	53	30.7
Position	Acquisition Librarian	17	9.8
	Circulation Librarian	32	18.5
	Serials Librarian	18	10.4
	Systems Librarian	14	8.1
	Reference Librarian	12	6.9
	Readers' services librarian	25	14.5
	E-resources Librarian	6	3.5
	Institutional Repository Librarian	2	1.2
	Faculty Librarian	7	4.0
	Digital Librarian	3	1.7
	Cataloguer	37	21.4
	Qualification	PhD	7
Master Degree		129	75
Post Graduate Diploma		37	21
Years of work experience	1 - 5 years	57	32.9
	6 - 10 years	78	45.1
	11 - 15 years	24	13.9
	16 - 20 years	6	3.5
	21 - 25 years	2	1.2
	26 - 30 years	0	0.0
	31 - 35 years	6	3.5

Table 4 shows the distribution of various library services rendered by librarians in the private universities in the Southern Nigeria. The results revealed that the following services: Library material recommendation, Library registration, Interlibrary loan, Selective dissemination of information, Document delivery, Reference service, Outreach service, Prompt notification of library development, Notification of OPAC additions, Notification of Institutional Repository update, Images/photos service, Library orientation, Library education, Charging and Discharging of library materials and Translation services were rendered to the library users. Majority of the respondents claimed that they participated in the following services; Library orientation 121(70%), closely followed by Reference service 119(69%), followed by Library material recommendation 64%, Selective dissemination of information 64%, while the minority 9% were involved in translation services.

Table 4. Types of library services delivered by librarians in Private universities in Southern Nigeria

		Private universities	
		N = 173	
S/N	Service	Delivered	
		N	%
1.	Library materials recommendation	111	64.2
2.	Library registration	103	59.5
3.	Interlibrary loan	56	32.4
4.	Selective dissemination of information	110	63.6
5.	Document delivery	67	38.7
6.	Reference service	119	68.8
7.	Outreach service	26	15.0
8.	Prompt notification of library development	59	34.1
9.	Notification of OPAC additions	64	37.0
10.	Notification of Institutional Repository update	45	26.0
11.	Notification of new library resources arrivals	99	57.2
12.	Images/photos service	24	13.9
13.	Library orientation	121	69.9
14.	Library education	107	61.8
15.	Charging and Discharging of library materials	104	60.1
16.	Translation services	15	8.7

Table 5 provides answer to objective two that sought to determine the frequency at which librarians rendered various library services. The result of the findings shows that library services were rendered by the respondents on daily, weekly, and monthly basis while some of the participants were not involved in the delivery of certain library services. High number of the respondents claimed that they rendered the following services on daily basis; 117 (67.6%): Charging and Discharging of library materials, respondents were 111 (64.2%): Reference service and the respondents for Library registration service were 105 (60.7%). Notification of Online Public Access Catalogue (OPAC) additions service was claimed by 60 (34.7%) of the librarians, Outreach and Image/Photos services were rendered by 55 (31.8%) participants on weekly basis. Sixty-two (35.8%) of the librarians admitted that they were involved in the delivery of library orientation service to their users on monthly basis while 59 (34.1%) of the respondents had never participated in Translation services.

Table 5. Frequency of library services delivered by librarians in Private universities in Southern Nigeria

Service	Daily		Twice a week		Weekly		Monthly		Never		Mean	STD
	Responses N=173											
	N	%	N	%	N	%	N	%	N	%		
Library materials recommendation	75	43.4	22	12.7	33	19.1	38	22.0	5	2.9	3.48	.911
Library registration	105	60.7	17	9.8	29	16.8	17	9.8	5	2.9	4.21	.608
Interlibrary loan	38	22.0	12	6.9	53	30.6	44	25.4	26	15.0	3.29	.751
Selective dissemination of information	61	35.3	14	8.1	50	28.9	39	22.5	9	5.2	3.43	1.093
Document delivery	65	37.6	17	9.8	42	24.3	44	25.4	17	9.8	3.54	.979
Reference service	111	64.2	12	6.9	28	16.2	17	9.8	5	2.9	4.15	.968
Outreach service	45	26.0	8	4.6	55	31.8	43	24.9	22	12.7	3.39	.968
Prompt notification of library development	48	27.7	24	13.9	54	31.2	32	18.5	15	8.7	3.32	.955
Notification of OPAC additions	45	26.0	16	9.2	60	34.7	38	22.0	14	8.1	3.22	1.003
Notification of Institutional Repository update	33	19.1	21	12.1	54	31.2	42	24.3	23	13.3	3.01	1.038
Notification of new library resources arrivals	47	27.2	15	8.7	49	28.3	47	27.2	15	8.7	3.17	.981
Images/photos service	34	19.7	12	6.9	55	31.8	53	30.6	19	11.0	3.10	.969
Library orientation	61	35.3	10	5.8	34	19.7	62	35.8	6	3.5	3.21	1.054
Library education	63	36.4	16	9.2	35	20.2	54	31.2	5	2.9	3.25	1.024
Charging and Discharging of library materials	117	67.6	5	2.9	16	9.2	27	15.6	8	4.6	4.11	.926
Translation services	29	16.8	15	8.7	40	23.1	30	17.3	59	34.1	2.89	1.024

The results on Table 6 captured the findings on the virtual mode by which the librarians deliver their services to their users. The Table presented the virtual mode of service delivery under two categories; Electronic and social media. Under Electronic media, it was discovered that Library website, E-mail and Telephone calls were highly used by the respondents to disseminate various library services. The results on Table 6 shows that electronic media such as Library website was highly used by the respondents to deliver library services like Notification of new library arrival was 156 (90.2%), Library education was 137(79.2%) and Prompt notification of library development was 127 (73.4%); E-mail was also highly used for Document delivery was 132 (73.4%), Reference services was 130 (75.1%); while the least used electronic media was Telephone call. From the social media mode of service delivery by the respondents, it was reported that Whatsapp and Facebook were used at moderate level to deliver services to their users. Social Media platforms like Whatsapp was used for Reference service 62 (35.8%), Selective dissemination of information was 57 (32.9%) and Facebook for Notification of new library arrival was 59

(34.1 %) and Library education was 55 (31.8%) while Skype and Flickr were applied to service delivery by the respondents at low level. The results on Table 6 have established that the respondents from the private university libraries studied used more of Electronic media than social media for library service delivery.

Table 6. Distribution by virtual mode of service delivery in Private universities in Southern Nigeria

Service	Virtual methods of service delivery											
	Electronic Media					Social Media						
	Telephone call	Text message	e-Bulletin	E-Mail	Library website	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
	N= 173											
Library materials recommendation	75 (43.4%)	60 (34.7%)	30 (17.3%)	64 (37.0%)	57 (32.9)	44 (25.4%)	46 (26.6%)	9 (5.2%)	9 (5.2%)	8 (4.6%)	2 (1.2%)	2 (1.2%)
Library registration	27 (15.6%)	49 (28.3%)	19 (11.0%)	27 (15.6%)	49 (28.3%)	25 (14.5%)	29 (16.8%)	2 (1.2%)	5 (2.9%)	2 (1.2%)	0 (0.0%)	2 (1.2%)
Interlibrary loan	47 (27.2%)	38 (22.0%)	39 (22.5%)	27 (15.6%)	81 (46.8%)	35 (20.2%)	15 (8.7%)	6 (3.5%)	5 (2.9%)	7 (4.0%)	4 (2.3%)	2 (1.2%)
Selective dissemination of information	40 (23.1%)	49 (28.3%)	45 (26.0%)	49 (28.3%)	102 (59.0%)	57 (32.9%)	46 (26.6%)	5 (2.9%)	5 (2.9%)	5 (2.9%)	7 (4.0%)	2 (1.2%)
Document delivery	32 (18.5%)	40 (23.1%)	49 (28.3%)	132 (76.3%)	84 (48.6%)	32 (18.5%)	27 (15.6%)	8 (4.6%)	10 (5.8%)	12 (6.9%)	3 (1.7%)	5 (2.9%)
Reference service	55 (31.8%)	49 (28.3%)	46 (26.6%)	130 (75.1%)	40 (23.1%)	62 (35.8%)	53 (30.6%)	10 (5.8%)	5 (2.9%)	15 (8.7%)	2 (1.2%)	2 (1.2%)
Outreach service	22 (12.7%)	49 (28.3%)	38 (22.0%)	69 (39.9%)	92 (53.2%)	15 (8.7%)	33 (19.1%)	7 (4.0%)	9 (5.2%)	10 (5.8%)	3 (1.7%)	4 (2.3%)
Prompt notification of library development	30 (17.3%)	50 (28.9%)	61 (35.3%)	103 (59.5%)	127 (73.4%)	54 (31.2%)	15 (8.7%)	5 (2.9%)	16 (9.2%)	5 (2.9%)	2 (1.2%)	4 (2.3%)
Notification of OPAC additions	31 (17.9%)	42 (24.3%)	51 (29.5%)	27 (15.6%)	9 (5.2%)	42 (24.3%)	40 (23.1%)	7 (4.0%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	2 (1.2%)
Notification of Institutional Repository update	15 (8.7%)	29 (16.8%)	54 (31.2%)	83 (48.0%)	136 (78.6%)	29 (16.8%)	35 (20.2%)	8 (4.6%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	2 (1.2%)
Notification of new library resources arrivals	16 (9.2%)	50 (28.9%)	69 (39.9%)	125 (72.3%)	156 (90.2%)	56 (32.4%)	59 (34.1%)	12 (6.9%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	4 (2.3%)
Images/photos service	9 (5.2%)	19 (11.0%)	35 (20.2%)	53 (30.6%)	102 (59.0%)	15 (8.7%)	42 (24.3%)	18 (10.4%)	10 (5.8%)	13 (7.5%)	4 (2.3%)	4 (2.3%)
Library orientation	22 (12.7%)	49 (28.3%)	58 (33.5%)	88 (50.9%)	129 (74.6%)	50 (28.9%)	15 (8.7%)	17 (9.8%)	13 (7.5%)	12 (6.9%)	5 (2.9%)	5 (2.9%)
Library education	26 (15.0%)	39 (22.5%)	63 (36.4%)	40 (23.1%)	137 (79.2%)	15 (8.7%)	55 (31.8%)	17 (9.8%)	13 (7.5%)	12 (6.9%)	3 (1.7%)	5 (2.9%)
Charging and Discharging of library materials	50 (28.9%)	43 (24.9%)	44 (25.4%)	68 (39.3%)	97 (56.1%)	24 (13.9%)	28 (16.2%)	2 (1.2%)	4 (2.3%)	2 (1.2%)	2 (1.2%)	2 (1.2%)
Translation services	9 (5.2%)	10 (5.8%)	31 (17.9%)	36 (20.8%)	57 (32.9%)	14 (8.1%)	18 (10.4%)	9 (5.2%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	2 (1.2%)

5. Discussions of Findings

The results of this study are presented below according to the objectives of the study.

5.1 Types of service delivery by Librarians

Virtually all the sixteen listed library services: Library material recommendation, Library registration, Interlibrary loan, Selective dissemination of information, Document delivery, Reference service, Outreach service, Prompt notification of library development, Notification of OPAC additions, Notification of Institutional Repository update, Images/photos service, Library orientation, Library education, Charging and Discharging of library materials and Translation services were rendered to the library users by the librarians in the private university libraries in the Southern Nigeria. These findings were in-line with that of Ola (2010), Ezeani (2011), Madhusudhan and Nagabhushanam (2012), Opeke and Onuoha (2013), Quadri and Idowu (2016), Baro et al. (2013) and Ilesanmi and Mabawonku (2020) who reported that information professionals were involved in providing various library services to their clientele. Therefore, the users are better informed and in turn gain access and make best use of the services of their libraries.

5.2 Librarians' frequency of service delivery

Library services were found to be delivered to the users of the libraries at regular interval. The findings of this study revealed that high per cent of the respondents frequently delivered charging and discharging, reference service and library registration which topped the most frequently delivered services by the respondents as over half of the respondents claimed they delivered the service on daily basis. Library services like translation and photo service were the least delivered services by librarians in the private universities studied. This result is in agreement with the reports of Baro et al. (2013); Singha and Sarmah (2015); Kabir and Efe (2022) who found that library services were highly rendered to users in India and Nigerian universities studied. This therefore implies that the respondents rendered library services on regular basis to satisfy the users' information needs.

5.3 Virtual mode of service delivery

The results of this study revealed that both electronic and social media were deployed by the respondents for library service delivery.

5.3.1 Electronic media and Social media

Concerning virtual method of delivering services, the results of this study revealed that electronic media such as library website, e-mail, telephone calls and text message were prevalent among the electronic media methods used to deliver library services by librarians in Southern Nigeria private

universities. It was also reported that Skype and Flickr recorded least usage for service delivery. With reference to specific uses, the result also revealed that e-mail was used for library materials recommendation, selective dissemination of information and document delivery. Telephone call and text message were used for library materials recommendation while library website was used for library registration and notification of latest additions and development in the library.

Relating virtual method of service delivery to types of library services, it could be deduced that librarians have demonstrated their expertise by using the appropriate method to deliver different library services to their users. This result is in consonance with that of Ola (2010) who asserted that virtual method of library service delivery is inevitable in the information age. The result is also in agreement with the finding of Mabawonku (2017) who reported that librarians in Nigeria have inclined to the application of virtual methods such as email, text messages and social media platforms to deliver services to the university communities.

This result is also in support with the submission of Madhusudhan and Nagabhushanam (2012) who studied twenty university libraries in India using virtual method such as library websites to deliver services like online public access information, reference service, library materials recommendation, and current awareness services among others. The results further corroborated the submissions in the reports of Mbofung (2014); Mabawonku (2017); Ilesanmi and Mabawonku (2020) who found that virtual method was used by many of their librarians in Nigerian universities to render electronic document delivery to a very high percentage of their users. Findings of this study on the use of different virtual methods used to deliver library services is in line with Nnadozie's (2016), and Ajala's and Ojo's (2011) submissions that established the use of e-mail as one of the methods of services delivery among the studied information professionals.

On the result of the use of social media for service delivery by librarians in private universities in Southern Nigeria, findings from studies by Baro, et al. (2013); Quadri and Idowu (2016); Akporhonor and Endouware (2016); Weerasinghe and Hindagolla (2018); Monagle and Finnegan (2018); Kabir and Efe (2022) who reported high percentage use of social media such as Facebook, Whatsapp, Twitter and Google+ for service delivery among the information professionals studied affirmed the results of this study which recorded high use of Facebook and Whatsapp to deliver services such as Notification of new library resources arrival and Selective dissemination of information respectively.

Relating this result to Media Richness Theory proposed by Daft and Lengel (1984), it could be deduced that library services are delivered through the virtual media which could be electronic, social or both. This result corroborates the findings of Park, Chung and Lee (2012) who found that three text based communication methods such as e-mail, mobile phone text and Facebook were used as channels of communication among Southwestern public university staff and students studied in the United States of America. Also, Ezeani (2011) reported that e-mail was used by a significant number of librarians in Nigerian universities for various library services delivery. Further, Yu-Feng and Yang-Siang's (2010) findings on media richness indicated that e-mail as a method of service delivery was best for comprehensive service delivery in Taiwan. It could be concluded that there is growing use of virtual methods by librarians for service delivery, however, electronic media use for service delivery among private universities in the Southern Nigeria was found to be predominant.

6. Conclusion

The study concluded that librarians in private universities in Nigeria rendered various library services to their users with high use of electronic media and moderate use of social media for service delivery. Though electronic media was predominantly used than social media for service delivery among the librarians. The application of virtual methods such as email, phone calls, website, Whatsapp and Facebook among others for service delivery aided the promptness of service delivery among librarians in private universities in Nigeria. Various library services are now promptly delivered to the library users at their comfort zone for their optimal utilisation.

7. Recommendations

Based on the findings of this study, the following recommendations were proffered:

- Librarians should participate in the delivery of various library services using more virtual methods of communication.
- Librarians should acquire more electronic communication skills to enable them keep pace with evolving demand on the profession.
- Librarians should be trained especially on emerging technology deployment to facilitate prompt library service delivery.
- Library management should make ICT infrastructure available and accessible which would enhance effective service delivery.
- This study is limited to private universities in Nigeria, as such, it could be replicated in other academic libraries globally.

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