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Distance Learners' Assessment of the Quality and Satisfaction of the National Open University of Nigeria's Internet-based Service Delivery

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Abstract. This study examined the quality of internet-based service delivery and satisfaction of distance learners of the National Open University of Nigeria (NOUN), Abuja through a descriptive survey method, using 875 distance learners which were selected through multi-stage sampling technique from three selected study centres of the University in Abuja, Nigeria. Two research questions were answered and four hypotheses were tested at 0.05 level of significant. Data were collected with the use of a modified 4-point Likert scale validated instrument titled "Quality and Satisfaction of Internet Service Delivery Questionnaire (QSISDQ; r=0.91). Data were analysed using descriptive statistics of t-test and ANOVA. Results revealed good quality and very high extent satisfaction of internet-based services offered based on study centre ($F(2,874) = 0.08$; $p=0.92$) and gender ($t(1,873) = 2.96$; $p=0.77$). Findings further revealed no significant difference in the extent of satisfaction derived in internet-based services based on study centre ($F(2,874) = 0.14$; $p=0.87$) and gender ($t(1,873) = -1.24$; $p = 0.21$). Based on the findings, recommendations point to the effect that University management should take the internet-based services offered to an enviable realm.

Keywords: Internet-based services, quality, satisfaction, distance learners

1. Introduction

The internet is a vast network that connects computers worldwide. The internet is a vehicle for transporting information stored in files or documents on a computer (Adedapo, 2021). In comparison to the pre-internet era, the internet has made teaching and learning easier and less expensive to achieve. Today, the internet has established itself as a veritable source of information and a channel of communication, allowing students, faculty, and researchers to access a wide range of relevant data and information. In his review of the effects of the internet on students' studies, Affum (2022) believes that the internet has improved its purpose by making it easier for students to obtain academic materials that are not readily available in the library. Anasi (2006) investigates the pattern of internet use by undergraduates at the University of Lagos Main Campus Akoka, Lagos, and concluded that the internet positively affected the students' learning and career ambitions despite their moderate use of the internet at the time. Mandasari's (2020) study on the utilization of internet service for online learning towards students' academic performance on Business correspondence course revealed that the benefits of online learning are learning accomplishment, commitment, and learning stimulation. Given all of these submissions about the beneficial use of the internet in educational fields, it is clear that distance education has a lot of potential in higher education.

After the covid-19 pandemic, which has created challenges and disruption across the Higher Education sector, the survival of tertiary education institutions will increasingly rely on various forms of electronic delivery and communication. In Nigeria, the recent development following the covid-19 pandemic has raised awareness among the government and universities about the importance of effectively promoting distance education and life-long learning. Many universities had already implemented practices to make their education delivery more flexible and accessible in order to meet the needs of their students. According to Bashir, Bashir, Rana, Lambert, and Vernallis (2021), some aspects of blended learning were already in place.

Regardless of the importance associated with quality internet-based services provided, it may be perceived that distance learners at the University are dissatisfied with the quality of these services provided. Furthermore, it appears that students are having difficulty making adequate use of these internet services. This could be due to the poor quality of the institution's internet-based services. When internet services are not optimal, it will most likely have a negative impact on distance learners' activities and academic results. In most cases, learners are unable to complete their assignments, class work, adequately prepare for their exams, and do an adequate job due to the poor quality of these internet-based services. This has the implication that their academic performance will suffer as a result. The possibility of poor internet-based service delivery and satisfaction affecting distance learners' academic performance is, without a doubt, the crux of the problem investigated in this study.

Distance learners differ from face-to-face students in that they may encounter unique challenges that can lead to misunderstandings (Al-Arimi, 2014; Chapman, Goodman, Jawitz & Deacon, 2016; Heidrich, Barbosa, Cambruzzi, Rigo, Marrtins & dos Santos, 2018). Distance learners had limited access to high-speed internet, infrastructure, and online support from facilitators to learners and learners to facilitators in the past (Maboe, 2017; Munyoka, 2014; Olumide & Iloanya, 2019; Victor & Lufungulo, 2007). Kazondovi, Isaacs, and Lwendo (2022) reported in a study on the challenges distance education students faced during their education degree programme at the University of Namibia's Faculty of Education that the University should improve slow internet speeds, limited internet access, lecturer student interaction, collaboration between distance education students, and a lack of computers, among other things.

As a distance learning institution, the National Open University of Nigeria uses the internet for almost all of its activities. From the admissions stage to the evaluation stage, the university provides web-based services. The University provides solutions to its students' academic and personal problems, and the internet serves as the medium of delivery. Students are the primary users of the institution's internet-based services. According to Adamu (2017), the total number of active learners at the National Open University of Nigeria is over 254,000, which is nearly, if not more than, the total number of students at least 15 conventional universities in Nigeria.

1.1 Statement of the Problem

When compared to the period prior to the invention of the internet, internet-based service delivery has contributed to making teaching and learning easier and less expensive to achieve. Despite the availability of internet-based services at the National Open University of Nigeria, researchers discovered that some distance learners were dissatisfied with the quality of these services. This could be due to the poor quality of the internet-based services provided by the institution and its affiliate study centers. Few studies have been conducted on the quality of internet-based services offered and nothing is reported about studies that have used a combination of gender, age, study centre and level of study in higher institutions of learning especially in context of distance learning institutions in Nigeria. None has been carried out to examine the extent of internet-based service delivery and learners' satisfaction in National Open University of Nigeria hence the problem which the researcher hope to solve. Student satisfaction is not only crucial to institutions, but also to learners themselves. As a result, there is a need to assess the satisfaction of distance learners with internet-based service delivery at the National Open University of Nigeria, as well as individual learner satisfactions based on gender and study center. Student satisfaction was defined by Kuo-shu and Tzu-Pu (2012) as the student's positive feelings or attitude toward his or her learning activities. According to Ahmad, Pramono, and Suratno (2009), satisfaction is determined by the difference between perception and expectation. According to a study conducted by Seeda and Mostafa (2017), students' satisfaction and barriers of e-learning course among nursing students at Mansoura University indicate that the majority of the students are extremely satisfied with their e-learning experience. However, in this study, internet-based service delivery satisfaction is defined as the extent to which learners are satisfied with the quality of internet-based service delivery. This includes admission, registration, facilitation, course materials, e-ticketing, assignment, examinations, practical, research, and other academic activities.

1.2 Objectives of the Study

Specifically, the study set out to:

- examine the quality of internet based services offered in NOUN.
- assess satisfaction of distance learners on the use of this internet based services offered in NOUN.

1.3 Research Questions

The study provided answers to the following research questions:

- What is the quality of internet based services offered in NOUN.
- To what extent are the distance learners in NOUN satisfied with the quality of internet based service delivery?

1.4 Hypotheses

The following research hypotheses were stated and tested at 0.05 level of significance.

H01: There is no significance difference in learners' responses on the quality of internet based services offered in NOUN based on study centre.

H02: There is no significant gender difference in learners' responses on the quality of internet based services offered in NOUN.

H03: There is no significance difference in learners' responses on the satisfaction level of internet based services offered in NOUN based on study centre.

H04: There is no significant gender difference in learners' responses on the satisfaction level of internet based services offered in NOUN.

2. Theoretical Justification

The study adopted the theory of expectancy disconfirmation which seeks to explain post-purchase or post-adaptation satisfaction as a function of expectation; perceived performance, and disconfirmation of beliefs (Oliver, 1980, 1997). As applied to this study, distance learners of National Open University of Nigeria come to the university with expectations of robust internet-based service delivery they want to get from their study centres. If the services rendered to the learners meet or exceed their expectations, they will be satisfied but if vice versa then they will be dissatisfied. The current study's findings are expected to contribute to improving empirical research findings that can be used to inform teaching and learning practices in higher education. This will also provide learners from open and distance institutions with an understanding of how to use and appreciate internet services.

3. Methodology

A descriptive survey research design was used to examine the quality of internet-based service delivery and satisfaction of the distance learners in selected study centres of the National Open University of Nigeria. The design is appropriate for the study because the goal of a descriptive survey research design is to gather precise and factual information about a current phenomenon (Saunders, Lewis & Thornhill, 2013). The target population for the study was made up of all distance learners of National Open University of Nigeria who were duly registered during 2022 second semester. Multistage sampling technique was used in the selection of the participating students. Simple random sampling method was used to select three study centres from the study centres in Abuja; this resulted in the selection of Abuja model study centre, Wuse II study centre and Garki II study centre. Accidental/convenience sampling technique was used to select all students that came for examinations while purposive sampling techniques was finally used based on students' readiness to take part in the study. This resulted in a total of 875 students that participated in the study.

An instrument tagged "Quality and Satisfaction of Internet Service Delivery Questionnaire (QSISDQ)" was adapted from the work of Joudeh & Dandis (2018), it consisted of positive and negative statements concerning students' opinions of the quality and satisfaction of internet based services offered in NOUN. It consisted two sections, A and B. Section A consisted personal information about the learners like age and level of study. Section B consisted of statement items. The statements were rated on a four-point Likert scale of Very Good (VG), Good (G), Poor (P) and Very Poor (VP) for the Quality aspect of the items and Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) for the satisfaction aspect of the items. Scores are 4, 3, 2, 1, for SA/VHE, A/HE, D/LE and SD/VLE respectively for positively worded items while reverse was the case for negatively worded items. To ensure validity of the instrument, the original instrument from which initial 60 item instrument was adapted was given to measurement and evaluation as well as ICT experts to review it in the aspect of content, relevance, scope of coverage, language of presentation, clarity of expression and overall adequacy. Based on their comments, some of the items were modified while some were removed, 55 items survived the experts' scrutiny. The 55 items instrument was then pilot tested at a study centre outside the study area. After 15 items have been deleted from the corrected item-total correlation column leaving 40 items, the reliability coefficient of the instrument was calculated using Cronbach Alpha's measure and the instrument yielded a reliability index of 0.91. Data were collected by on-the-spot administration and completion of the questionnaire. The data was analysed using descriptive statistics of mean and

standard deviation to answer the research questions and inferential statistics of t-test and Analysis of Variance (ANOVA) to test the hypothesis at 0.05 significance level.

4. Results

This section presents the analyses of the collected data, and the findings were discussed.
Socio-Demographic Attributes of the Respondents

Table 1: Respondents' Distribution Study Centre and Gender

		Freq.	%
Study Centre	Abuja Model	275	31.40
	Wuse II	304	34.80
	Garki II	296	33.80
	Total	875	100.00
Gender	Male	469	53.60
	Female	406	46.40
	Total	875	100.00

Table 1 shows the socio-demographic attributes of the respondents. 275 (31.40) of the respondents were from Abuja model study centre, 304 (34.80) were from Wuse II study centre while the remaining 296 (33.80) were from Garki II study centre. 496 (53.60%) of the respondents were male while 406 (46.40%) were females. 318 (36.30%).

Quality of Internet Based Services Delivery in NOUN

Research Question One: What is the quality of internet-based services offered in NOUN?

Table 2: Respondents' Perception of the Quality of Internet Based Services Offered in NOUN

		Freq.	%	Mean	SD	Remark
The internet service is of neat appearance	VP	54	6.2	2.91	0.77	Good
	P	138	15.8			
	G	508	58.1			
	VG	175	20.0			
	Total	875	100.0			
The materials associated with the service have good visual appearance	P	181	20.7	3.05	0.68	Good
	G	467	53.4			
	VG	227	25.9			
	Total	875	100.0			
Materials associated with the service are informative	VP	10	1.1	3.24	0.72	Good
	P	114	13.0			
	G	407	46.5			
	VG	344	39.3			
	Total	875	100.0			
The internet service promises to do something and deliver at the promised time	VP	20	2.3	3.05	0.79	Good
	P	192	21.9			
	G	382	43.7			
	VG	281	32.1			
	Total	875	100.0			
The internet is equipped with necessary information to deliver service	VP	21	2.4	3.35	0.68	Good
	P	39	4.5			
	G	427	48.8			
	VG	388	44.3			
	Total	875	100.0			
The internet is dependable in handling users' problems	VP	14	1.6	3.20	0.70	Good
	P	100	11.4			
	G	458	52.3			
	VG	303	34.6			
	Total	875	100.0			

The internet is never too busy to respond to the users' request	VP	32	3.7	3.93	0.82	Very Good
	P	232	26.5			
	G	379	43.3			
	VG	232	26.5			
	Total	875	100.0			
The internet is always willing to help	VP	7	.8	3.45	0.59	Very Good
	P	24	2.7			
	G	414	47.3			
	VG	430	49.1			
	Total	875	100.0			
The internet inspires confidence in the users	P	7	.8	3.56	0.51	Very Good
	G	370	42.3			
	VG	498	56.9			
	Total	875	100.0			
The internet has adequate knowledge to address users' problems	P	43	4.9	3.48	0.59	Very Good
	G	370	42.3			
	VG	462	52.8			
	Total	875	100.0			
The internet always give the users' individual attention	VP	68	7.8	2.66	0.87	Good
	P	323	36.9			
	G	322	36.8			
	VG	162	18.5			
	Total	875	100.0			
The internet always consider the best interest of the users	VP	54	6.2	3.45	0.82	Very Good
	P	20	2.3			
	G	274	31.3			
	VG	527	60.2			
	Total	875	100.0			
The internet always understand the specific needs of the users	VP	10	1.1	3.55	0.62	Very Good
	P	30	3.4			
	G	308	35.2			
	VG	527	60.2			
	Total	875	100.0			
The internet is easy to connect	P	33	3.8	3.47	0.57	Very Good
	G	397	45.4			
	VG	445	50.9			
	Total	875	100.0			
Provides strong and high quality network signals	VP	10	1.1	3.18	0.66	Good
	P	92	10.5			
	G	500	57.1			
	VG	273	31.2			
	Total	875	100.0			
Provides prompt and quick services	VP	20	2.3	3.16	0.63	Good
	P	55	6.3			
	G	564	64.5			
	VG	236	27.0			
	Total	875	100.0			
Maintains speed of the services during busy times	VP	27	3.1	3.02	0.72	Good
	P	139	15.9			
	G	500	57.1			
	VG	209	23.9			
	Total	875	100.0			
The internet is competent and efficient	VP	20	2.3	3.09	0.62	Good
	P	72	8.2			
	G	591	67.5			
	VG	192	21.9			
	Total	875	100.0			
The quality of the network is always stable	VP	6	.7	2.96	0.67	Good
	P	196	22.4			
	G	499	57.0			
	VG	174	19.9			
	Total	875	100.0			
The quality and strength of the network is always excellent	VP	22	2.5	2.87	0.71	Good

	P	219	25.0
	G	488	55.8
	VG	146	16.7
	Total	875	100.0

However, in this study, internet-based service delivery satisfaction experience is defined as the extent to which learners are satisfied with the quality of internet-based service delivery. This should include admission, registration, facilitation, course materials, e-ticketing, assignment, examinations, practical, research, and other academic activities. However, in this study, internet-based service delivery satisfaction is defined as the degree to which learners are satisfied with the quality of internet-based service delivery. This should include admission, registration, facilitation, course materials, e-ticketing, assignments, examinations, practicals, research, and other academic activities. With a mean and standard deviation of 3.55 and 0.62, the internet always understands the specific needs of its users. With a mean and standard deviation of 3.47 and 0.57, respectively, connecting to the internet is simple. With a mean and standard deviation of 3.18 and 0.66, respectively, the internet provides strong and high-quality network signals. With a mean and standard deviation of 3.16 and 0.63, the internet provides prompt and timely services. During peak times, the internet maintains service speed, with a mean and standard deviation of 3.02 and 0.72, respectively. With a mean and standard deviation of 3.09 and 0.62, respectively, the internet is competent and efficient. The network's quality is always stable, with mean and standard deviation of 2.96 and 0.67, respectively, and the network's quality and strength are always excellent, with mean and standard deviation of 2.87 and 0.71, respectively. According to the responses in table 4.2 above, respondents agreed that the quality of internet-based services offered in NOUN is average.

Research Question Two: To what extent are distance learners in NOUN satisfied with the quality of internet based service delivery?

Table 3: Respondents' Perception on the Extent Distance Learners in NOUN are Satisfied with the Quality of Internet Based Service Delivery

		Freq.	%	Mean	SD	Remark
The internet performs the service at the appropriate time	*VLE*	10	1.1	3.47	0.66	Very High Extent
	LE	51	5.8			
	HE	335	38.3			
	VHE	479	54.7			
	Total	875	100.0			
The internet informs the user exactly when services will be delivered	LE	25	2.9	3.59	0.55	Very High Extent
	HE	308	35.2			
	VHE	542	61.9			
	Total	875	100.0			
The user is given prompt service from internet	LE	20	2.3	3.62	0.53	Very High Extent
	HE	289	33.0			
	VHE	566	64.7			
	Total	875	100.0			
The user feels secure when dealing with the internet	LE	27	3.1	3.67	0.53	Very High Extent
	HE	234	26.7			
	VHE	614	70.2			
	Total	875	100.0			
The internet is consistently polite in dealing with the users	LE	27	3.1	3.70	0.52	Very High Extent
	HE	209	23.9			
	VHE	639	73.0			
	Total	875	100.0			
I am satisfied with the internet services	VLE	10	1.1	3.59	0.62	Very High Extent
	LE	34	3.9			
	HE	264	30.2			
	VHE	567	64.8			
	Total	875	100.0			
My choice of the internet services was a wise one	VLE	10	1.1	3.59	0.60	Very High Extent
	LE	24	2.7			
	HE	280	32.0			
	VHE	561	64.1			
	Total	875	100.0			
I am satisfied with the internet services	VLE	10	1.1	3.55	0.64	Very High Extent

	LE	41	4.7			
	HE	284	32.5			
	VHE	540	61.7			
	Total	875	100.0			
I am pleased to use the internet services	LE	34	3.9	3.50	0.57	Very High Extent
	HE	373	42.6			
	VHE	468	53.5			
	Total	875	100.0			
Services provided by the internet are excellent	LE	40	4.6	3.50	0.58	Very High Extent
	HE	357	40.8			
	VHE	478	54.6			
	Total	875	100.0			
I will deal with the internet services more in future	LE	17	1.9	3.45	0.54	Very High Extent
	HE	444	50.7			
	VHE	414	47.3			
	Total	875	100.0			
I would consider the internet services as my first choice	LE	40	4.6	3.39	0.57	High Extent
	HE	452	51.7			
	VHE	383	43.8			
	Total	875	100.0			
I will say favourable things about the internet services	LE	34	3.9	3.36	0.56	High Extent
	HE	488	55.8			
	VHE	353	40.3			
	Total	875	100.0			
I will recommend the internet services to other people	VLE	17	1.9	3.29	0.64	High Extent
	LE	36	4.1			
	HE	499	57.0			
	VHE	323	36.9			
	Total	875	100.0			
I will be loyal customer of the internet services	VLE	48	5.5	3.01	0.85	High Extent
	LE	165	18.9			
	HE	390	44.6			
	VHE	272	31.1			
	Total	875	100.0			
I will not switch to competitors if the internet services increase price	VLE	143	16.3	2.69	1.01	High Extent
	LE	193	22.1			
	HE	331	37.8			
	VHE	208	23.8			
	Total	875	100.0			
I am getting good internet connection speed service for a reasonable price	VLE	23	2.6	3.06	0.71	High Extent
	LE	127	14.5			
	HE	498	56.9			
	VHE	227	25.9			
	Total	875	100.0			
As compared to the time and effort I sacrifice, I get reasonable quality of internet connection	VLE	30	3.4	3.44	3.62	High Extent
	LE	62	7.1			
	HE	552	63.1			
	VHE	224	25.6			
	43.00	7	.8			
	Total	875	100.0			
As compared to the total cost incurred, I get good profit by having the internet services	VLE	17	1.9	3.15	0.60	High Extent
	LE	51	5.8			
	HE	589	67.3			
	VHE	218	24.9			
	Total	875	100.0			
When I have a problem, the internet offers the right solution	LE	24	2.7	3.59	0.54	Very High Extent
	HE	307	35.1			
	VHE	544	62.2			
	Total	875	100.0			

According to table 3, respondents believe that the internet provides the service at the appropriate time, with a mean and standard deviation of 3.47 and 0.66, respectively. With a mean and standard deviation of 3.59 and 0.55, the

	N	Mean	Std. Deviation	Std. Error
Abuja Model	275	63.75	5.21	0.31
Wuse II	304	63.61	5.38	0.31
Garki II	296	63.58	5.15	0.30
Total	875	63.65	5.24	0.18

internet informs the user exactly when services will be delivered. The internet provides prompt service to the user, with a mean and standard deviation of 3.62 and 0.53, respectively. With a mean and standard deviation of 3.67 and 0.53, the user feels safe when using the internet. The internet is consistently courteous in its interactions with users, with a mean and standard deviation of 3.70 and 0.52, respectively. They are pleased with the internet services, as evidenced by mean and standard deviation values of 3.59 and 0.62, respectively. Their internet service selection was sound, with a mean and standard deviation of 3.59 and 0.60, respectively. With a mean and standard deviation of 3.55 and 0.64, they are pleased with the internet services. They enjoy using the internet, with a mean and standard deviation of 3.50 and 0.57, respectively. The internet's services are excellent, with a mean and standard deviation of 3.50 and 0.58, respectively. With a mean and standard deviation of 3.25 and 0.54, they will deal with internet services more in the future. They would prioritize internet services, with a mean and standard deviation of 3.39 and 0.57, respectively. Their choice of internet services was sound, with a mean and standard deviation of 3.59 and 0.60, respectively. They are pleased with the internet services, with a mean and standard deviation of 3.55 and 0.64, respectively. They are pleased with the internet services, with a mean and standard deviation of 3.50 and 0.57, respectively. The internet's services are excellent, with mean and standard deviations of 3.50 and 0.58, respectively. They will deal with internet services more in the future, with a mean and standard deviation of 3.25 and 0.54, respectively. With a mean and standard deviation of 3.39 and 0.57, they would prioritize internet services. With a mean and standard deviation of 3.59 and 0.60, their choice of internet services was sound. With a mean and standard deviation of 3.55 and 0.64, they are satisfied with the internet services. They enjoy using the internet, with mean and standard deviations of 3.50 and 0.57, respectively. The internet's services are excellent, with mean and standard deviation values of 3.50 and 0.58, respectively. They will use internet services more frequently in the future, with a mean and standard deviation of 3.25 and 0.54, respectively. They prioritize internet services, with a mean and standard deviation of 3.39 and 0.57, respectively.

Testing the Hypotheses

The following hypotheses were postulated and tested at 0.05 significance level.
H01: There is no significance difference in learners' responses on the quality of internet based service offered in NOUN based on study centre.

Table 4: Descriptive Statistics of Learners' Responses on the Quality of Internet- Based Services Offered in NOUN Based on Study Centre

Table 5: ANOVA of Learners' Responses on the Quality of Internet Based Services Offered in NOUN based on Study Centre

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.61	2	2.30	0.08	0.92
Within Groups	24038.98	872	27.57		
Total	24043.58	874			

Results in tables 4 and 5 above showed that there was no statistically significant difference ($F(2,874) = 0.08$) in learners' responses on the quality of internet based services offered in NOUN based on study centre ($p = 0.92 > 0.05$). The mean and standard deviation values also show no statistically significant difference in learners' responses the quality of internet based services offered in NOUN based on study centre. Therefore, the null hypothesis that says that there is significant difference in learners' responses on the quality of internet based services offered in NOUN based on study centre was accepted.

H02: There is no significant gender difference in learners' responses on the quality of internet based services offered in NOUN.

Table 6: Descriptive Statistics of Learners' Responses on the Quality of Internet Based Services Offered in NOUN based on gender

		N	Mean	Std. Deviation	Std. Error Mean
Quality of Internet Services	Male	469	64.13	5.27	0.24
	Female	406	63.09	5.17	0.26

Table 7: t-Test Analysis of Learners' Responses on the Quality of Internet Based Service Offered in NOUN Based on Gender.

		F	Sig.	T	df	Remark
Quality of Internet Services	Equal variances assumed	0.08	0.77	2.96	873	Accept
	Equal variances not assumed			2.97	859.68	

Results in table 6 and 7 above showed that there was no statistically significant difference (t(1,873) = 2.96) in learners' responses on the quality of internet based service offered in NOUN based on gender (p = 0.77> 0.05). The mean and standard deviation values also show no statistically significant difference in learners' responses on the quality of internet based service offered in NOUN based on gender. Therefore, the null hypothesis that says that there is no significance difference in gender of learners' responses on the quality of internet based services offered in NOUN was accepted.

H03: There is no significance difference in learners' responses on the satisfaction level of internet based services offered in NOUN based on study centre.

Table 8: Descriptive Statistics of Learners' Responses on the Satisfaction Level of Internet Based Services Offered in NOUN Based on Study Centre

	N	Mean	Std. Deviation	Std. Error
Abuja Model	275	68.36	9.18	0.55
Wuse II	304	67.99	10.52	0.60
Garki II	296	68.32	8.44	0.49
Total	875	68.22	9.42	0.32

Table 9: ANOVA of Learners' Responses on the Satisfaction Level of Internet Based Services offered in NOUN Based on Study Centre

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	24.753	2	12.376	0.14	0.87
Within Groups	77595.117	872	88.985		
Total	77619.870	874			

Results in tables 8 and 9 above showed that there was no statistically significant difference (F (2,874) =0.14) in learners' responses on the satisfaction level of internet based services offered in NOUN based on study centre (p = 0.87> 0.05). The mean and standard deviation values also show no statistically significant difference in learners' responses on the satisfaction level of internet based services offered in NOUN based on study centre. Therefore, the null hypothesis that states that there is no significance difference in learners' responses on the level of satisfaction of internet based services offered in NOUN based on study centre was accepted.

H04: There is no significant gender difference in learners' responses on the satisfaction level of internet based services offered in NOUN.

Table 10: Descriptive Statistics of Learners' Responses on the Satisfaction Level of Internet Based Services Offered in NOUN Based on Gender.

		N	Mean	Std. Deviation	Std Error Mean
Satisfaction of Internet Services	Male	469	67.85	10.10	0.47
	Female	406	68.64	8.57	0.43

Table 11: t-Test Analysis of Learners' Responses on the Satisfaction Level of Internet Based Services Offered in NOUN Based on Gender.

		F	Sig.	T	Df	Mean Diff.	Remark
Satisfaction of Internet Services	Equal variances assumed	1.59	0.21	-1.24	873	-0.79	Accept
	Equal variances not assumed			-1.25	872.64	-0.79	

Results in table 4.16 and 4.17 above showed that there was no statistically significant difference (t(1,873) =-1.24) in learners' responses on the satisfaction level of internet based services offered in NOUN based on gender (p = 0.21> 0.05). The mean and standard deviation values also show no statistically significant difference in learners' responses on the satisfaction level of internet based services offered in NOUN based on gender. Therefore, the null hypothesis that says that there is no significant gender difference in learners' responses on the satisfaction level of internet based services offered NOUN was accepted.

5. Discussion of Findings

Their internet service selection was sound, with a mean and standard deviation of 3.59 and 0.60, respectively. With a mean and standard deviation of 3.55 and 0.64, they are pleased with the internet services. They enjoy using the internet, with a mean and standard deviation of 3.50 and 0.57, respectively. The internet's services are excellent, with a mean and standard deviation of 3.50 and 0.58, respectively. With a mean and standard deviation of 3.25 and 0.54, they will deal with internet services more in the future. They would prioritize internet services, with a mean and standard deviation of 3.39 and 0.57, respectively. This is consistent with the findings of Da-Silva, Meirelles, Filenga, and Filho (2014), who found that higher service quality resulted in higher user satisfaction. This result backs up Ojomo and Opesade's (2019) earlier finding that system quality, service quality, information literacy skill, computer literacy skill, computer anxiety, gender, faculties, and student level were all significant predictors of student satisfaction with the university web portal. Sumi and Kabir (2021) also found a link between perceived service quality and satisfaction. The findings are also consistent with those of Seeda and Mostafa (2017), Arif et al. (2017), Anyim, (2020), and Gorpal et al., (2017). (2021). Ofulue and Ogunleye (2019) found that NOUN students were very satisfied with the ICT infrastructure.

The study also discovered no statistically significant differences in the quality of internet-based services offered in NOUN based on study center or gender. This is consistent with the findings of the Arif, Ameen, and Rafiq (2017) study, which found no significant difference in satisfaction between genders or among students in different study locations. The finding supports the findings of Sook-Hyun and Se-Joon (2013), who discovered no statistical difference between male and female participants in how information quality and navigation quality influenced satisfaction. Furthermore, the study found no statistically significant differences in the level of satisfaction learners had with the quality of internet-based services provided in NOUN based on study center or gender. This could be attributed to the study centers' staff's good human relations and commitment to duty. This report concurs with that of Fasiku, Awoleye, and Oyebisi (2020), who reported that when certain elements are taken into account in judging the quality of internet service, the internet service quality in the study area was remarkable. The findings back up Rasli et al(2012) .'s assertion that there is a need for consistency in ensuring that promises made to customers are realistic and achievable, as this will encourage their loyalty. Additionally, Sukandi (2010) finds a positive relationship between campus facilities and student satisfaction.

6. Conclusion and Recommendations

The current study investigated the effect of intent-based services on the satisfaction of distance learners. The study's findings indicated that the quality of internet-based services offered in NOUN is average, and the learners were extremely satisfied. The study also discovered that there was no statistically significant difference in learners' experiences with

the quality and satisfaction derived from NOUN's internet-based services based on study center or gender. The level of usability and poignancy of internet-based services is largely determined by the level of quality and user satisfaction. The findings of this study revealed a high level of quality and a high level of user satisfaction with the quality of internet-based services. This may, to some extent, contribute to the encouraging value factors. Based on the study's findings, the researchers recommend the following:

- NOUN's ICT management should improve the internet-based services provided.
- University administration should provide the necessary financial, manpower, and technological tools to elevate the internet-based services offered to an enviable level.
- School administration should conduct periodic inspections of these facilities to ensure their availability and usefulness.

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