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AN ASSESSMENT OF INTERNET SERVICE PROVIDERS' SERVICE PERFORMANCE ON CUSTOMER SATISFACTION IN FEDERAL CAPITAL TERRITORY, ABUJA

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ABSTRACT

This study critically investigates the extent to which Internet Service Providers (ISPs) service performance influences customer satisfaction in the Federal Capital Territory (FCT), Abuja. It provides a framework and methodology that shows how customer perception of ISPs' service performance influences customer satisfaction and reveals that adequate consideration should be given to functional and technical qualities in consonance with the quality dimensions. Data were obtained through questionnaires administered to 1504 participants. The data were analysed using inferential statistics. The study confirms that ISPs' service performance dimensions and the relationships amongst the variables tested in line with the study are relevant and appropriate. The findings of the study included: identified the dimensions to measure ISPs' service performance in this research. The dimensions include network quality, customer service and technical support, information quality, security and privacy. These are dimensions, which customers expect to see when evaluating ISPs' service performance. It was revealed through literature reviews that the important factor of business performance is that the satisfaction of customers leads to loyalty, repurchase intention and willingness to recommend to others. In conclusion therefore, it reveals the key ISPs' service performance dimensions as security and privacy that predict customer satisfaction. Statistically, customer service and technical support do not significantly influence customer satisfaction.

Keywords: *ISP's service Performance, Service Quality, Customer Perceptions, Customer Satisfaction and ISPs (Internet Service Providers).*

1.0 Introduction

Despite the significant growth of the Nigerian telecoms sector, there are many concerns surrounding the poor quality of Internet services. Most of the time, using Internet services in Nigeria is frustrating due to poor infrastructure resulting in poor network coverage, inadequacy of service delivery and charges that are widely perceived as being unjustifiable in the light of the poor quality of services (Uduchukwu, 2013; Kuboye, 2017; Gillwald *et al.,* 2018; World Bank Group, 2019; & Freedom House, 2020).

Since the Internet has become a vital technological tool for the success of businesses (Apăvăloaie, 2014), the concerns for quality by both domestic and business customers have become a necessary consideration. Addressing quality is fundamental to customer satisfaction as it is widely recognised that perceived quality of service is closely related to customer satisfaction, which affects future use and has an impact on social progress and national economic growth (Santouridis *et al.,* 2009; &William *et al.*, 2016).

In line with Philip and Hazlett (1997), customers in recent times are becoming more sensitive and critical about the quality of service that they experience, such as in the ISP sector. This indicates the need to understand the extent to which their perceptions of quality influence Users' Internet service uptake. Hence, the rationale for this study is to investigate the extent to which ISPs' service performance influences customer satisfaction in FCT, Abuja, to identify issues of priority for remedial intervention.

The Internet has created information highways of high speed electronic data exchange by which it is changing how people communicate, become informed or do business (Anie, 2011).It has provided a platform that allowsinteractions among intergovernmental institutions, transnational and non-governmental organisations in a global Internet governanceecosystem (Nanette & Meryem, 2015). Study undertaken by Bahrini and Qaffas (2019)confirmed thatICTs, which include Internet usage and broadband adoption drive the economic growth in a society.This was corroborated by Lee *et al,* (2017)that shows that the rate of Information Technology diffusion correlated with human progress that include economic development, political and civil activities.

Presently, the Internet is reducing inequalities of opportunity between rural and the urban centres by delivering educational programmes to remote locations (Anie, 2011). This has helped incommunicating knowledge through e-learning, e-training, e-library and research activities,thereby allowing education and research resources to be shared at national, regional and international levels (Kundishora, n.d.). Its undisputed force for economic growth and social change has not only released new forms of connectivity but has also provided an opening for new forms of innovation, entrepreneurship and social good (Dalberg, 2013). Also itsenormous potentials, stimulate the emergence and promotion of new business paradigms, such as electronic business (e-business) and electronic commerce (e-commerce)(Apăvăloaie, 2014).These are significant catalysts for restructuring commercial activities and business development strategies (Apăvăloaie, 2014). Therefore, digital technologies such as the Internet has proven to be a dynamic tool for stimulating or driving economic growth and competitiveness (Dalberg, 2013; & Apăvăloaie, 2014). Moreover, its influence on politics, culture, education and other social dimensions result in significant downstream benefits, such as job creation, increased uptake of technologies and development of work skills, ease of communication, trade expansion, poverty reduction, health, education and sustainable development (Ogunkunle & Fomsi, 2010; & Hafiz *et al*, 2013). Abuja Facts .2015. "Top 5 Cities To Do Business In Nigeria. ABUJA Is 2nd". Retrieved 26 October 2015.

For regions to benefit from a global Internet economy, i.e. one where the economic activities are directly associated with Internet use, they must have access to the

Internet and means to exploit its use (OECD, 2016). This in turn requires investment in infrastructure and expenditure to promote the development of national Internet activity (Nyirenda-Jere & Biru, 2015).The Internet economy involves businesses that provide Internet services, those that exploit services, including other stakeholders who in various ways may be Internet enabled and/or Internet-dependent (Karen *et al*, 2015).

Internet businesses in developing economies are growing, although not yet as extensively as those in high-income markets such as Europe or North America (Karen *et al*, 2015). The developing regions' proportion of GDP represented by the world Internet economy still lags behind the leading industrialized countries (Karen *et al*, 2015). So nations that wish to exploit the Internet's potential for social and economic profits must continue to invest in infrastructure and the broader ecosystem for innovation (Dalberg, 2013). It is sequel to the above that this study wishes to investigate the extent to which ISPs' service performance influences customer satisfaction in FCT, Abuja, Nigeria.

The general objective of this study is to investigate the extent to which ISPs' service performance influences customer satisfaction in FCT, Abuja with the following specific objectives:

(i) Ascertain if information quality affects customer satisfaction.
(ii) Examine whether security and privacy online lead to customer satisfaction.

2.0 Literature Review

i. ISPS' Service Performance

In the ISP sector, the theory of service management is significant, to know the needs and wants of customers, what they appraise to be their needs and what they are actually looking for (Gronroos, 1988; Kotler & Armstrong, 2007). According to studies by Anderson and Sullivan (1993), Brady & Cronin (2001) and Kotler and Armstrong (2007), the important factor of business performance is that customer satisfaction leads to loyalty, repurchasing intentions and willingness to recommend to others. They explain that service organisations need to know their customer experiences and their perception of the services they use, to enable them to provide better service performance that gives satisfaction to existing customers and will contribute towards the recruitment of new ones. Therefore, to survive in the competitive market field, service provision organisations such as ISPs have to continue to enhance their service performance effectively as "the high degree of service performance in any service provision domain is a differentiator in a competitive market and an effective way of improving customer satisfaction" (Kim et al., 2007). Hence, the need to provide an enhanced service performance measurement apparatus that would help to achieve customer satisfaction in today's marketing process, which is based on customer relationships (Ghotbabadi et al., 2015).

ii. Customer Satisfaction

Customer satisfaction is an important concept that organisations providing services such as ISPs need to understand for them to survive, compete and sustain their businesses (Awoke, 2015; Ling *et al.,* 2016). Many researchers agree that satisfaction is an attitude or evaluation that is formed by customers comparing their pre-purchase expectations of what they would obtain from a product or service with their subjective perception of the performance they actually have (Oliver, 1980). Thus, studies by Yi (1990), Kotler (2000) and William *et al.* (2016) show that customer satisfaction is based upon a person's feelings of pleasure or disappointment resulting from comparing a service or product's perceived performance against their original expectation.

Yi (1990) shows that customers do experience various degrees of satisfaction: when service performance falls short of expectation, the customer is dissatisfied and when performance matches expectations, the customer is satisfied. This was corroborated by Shams *et al.* (2020) whose study shows that customer satisfaction is affected by the magnitude of service failure. Therefore, ISPs need to know how to evaluate customer perceptions of quality services and a better understanding of customer needs will improve customer satisfaction, increase profitability and reduce running costs (Daniel and Berinyuy, 2010). This implies that an organisation which has a more satisfied customer base will experience greater economic returns (Anderson and Sulivan, 1993; William *et al.*, 2016). Since service organisations such as ISPs are mainly driven by customers and their sustainability in a competitive environment largely depends on the high quality of the service that they provide (Devi and Revathy, 2011), they need to frequently assess the quality of their service delivery to enable them to provide remedial interventions that will enhance their service performance in line with customer satisfaction (Awoke, 2015).

iii. Establishing ISPS' Service Performance Dimensions

The study by Vlachos and Vrechopoulos (2008), reveals that ISPs' network performance is related to service quality which in turn has led to customer value and satisfaction. Likewise, the study by Wiele *et al.* (2002) indicates that the dimensions of service quality play an important role in examining the performance of that organisation and states that perceived quality is related to the service performance of that service provider. In line with this, Sweeney and Soutar (2001) show that service performance is directly related to ISP's service quality and is seen to be significant for customers' usage in ISP/Telecom sector (Vlachos and Vrechopoulos, 2008; Thaichon *et al.*, 2014). This was corroborated by the study of Neger *et al.* (2013) which indicates that measuring service quality is the same as measuring the overall evaluation of performance.

2.1 Empirical Review

To have robust a model and constructs for this research, a study by Thaichon *et al.* (2014) was reviewed. The study aimed at developing service quality dimensions for the ISP industry and indicated that due to the need to meet the evaluation of service quality in the new information era, the E-Service Quality Scale was developed by (Parasuraman *et al.*, 2005). This was to help evaluate the efficiency and effectiveness of online shopping, purchasing and delivery of services (Wolfinbarger & Gilly, 2003) as it provides an overall customer evaluation and assessment of e-service delivery in

the virtual marketplace (Santos, 2003). SERVQUAL and E-SERVQUAL have been widely used in service provision domains to measure how well the services provided meet customers' expectations (Zhao & Benedetto, 2013). However due to the nature or features of the Internet services provided by ISPs, the SERVQUAL and E-SERVQUAL scales could not be used to adequately and effectively measure the service quality of ISP services (He and Li, 2010; & Thaichon *et al.,* 2014).

Many of the studies that use the scale of SERVQUAL or E-SERVQUAL have concentrated on service providers that use the Internet to provide or enhance their services (Vlachos & Vrechopoulos, 2008) such as shopping and banking industries, but not on the Internet service delivery or the ISPs that actually offer the Internet services (Thaichon *et al.,* 2014). Some studies have been carried out in the telecoms sector, specifically in the mobile telephony industry, but according to Santouridis and Trivellas (2010), there are basic differences that exist between Internet service delivery and other telecommunications services. These differences from the other telecoms services are mostly not applicable to ISPs. However, the study by Thaichon *et al.* (2014) was able to provide constructs of what ISP customers would expect from an ISP and it shows that these are influenced by the four dimensions, which include network quality; customer service and technical support; information quality; security and privacy. These dimensions of ISP's service quality from the study of Thaichon *et al.* (2014) correspond with the operational performance (network performance) and relational performance (service delivery process) that were indicated by Kim *et al.* (2007). The operational performance involves the network performance that has to do with network quality, which includes features like quality and strength of the network signal, number of errors, network disconnection, upload and download speed (Kim *et al.,* 2007; Thaichon *et al.,* 2012; & Thaichon *et al.,* 2014). The disruptions of the Internet connection can result in poor perceptions of network quality by the customer (Thaichon *et al.,* 2014). Therefore, network performance is critical to customer satisfaction.

Customer service and technical support is an important dimension to look for when evaluating service performance within the ISP sector and this can be categorised under the customer service performance that has to do with the service delivery process (Kim *et al*., 2007). ISP/Telecom organisations can provide extra services to enhance the quality of service they offer (Wang & Wu, 2012). These additional services can provide excellent customer care service and after-sales technical support. These will build a good relationship between the ISPs and their customers (Aydin & Özer, 2005; & Thaichon *et al.,* 2014). Thus, the foregoing discussions show that when evaluating ISPs' service performance, the dimensions to be considered will include network quality, customer service, information quality, security and privacy online.

2.2 Conceptual Framework

This section shows the developed conceptual framework that guides this study analysis and as derived from the foregoing discussions in Section 2.3, is shown in Figure 1.

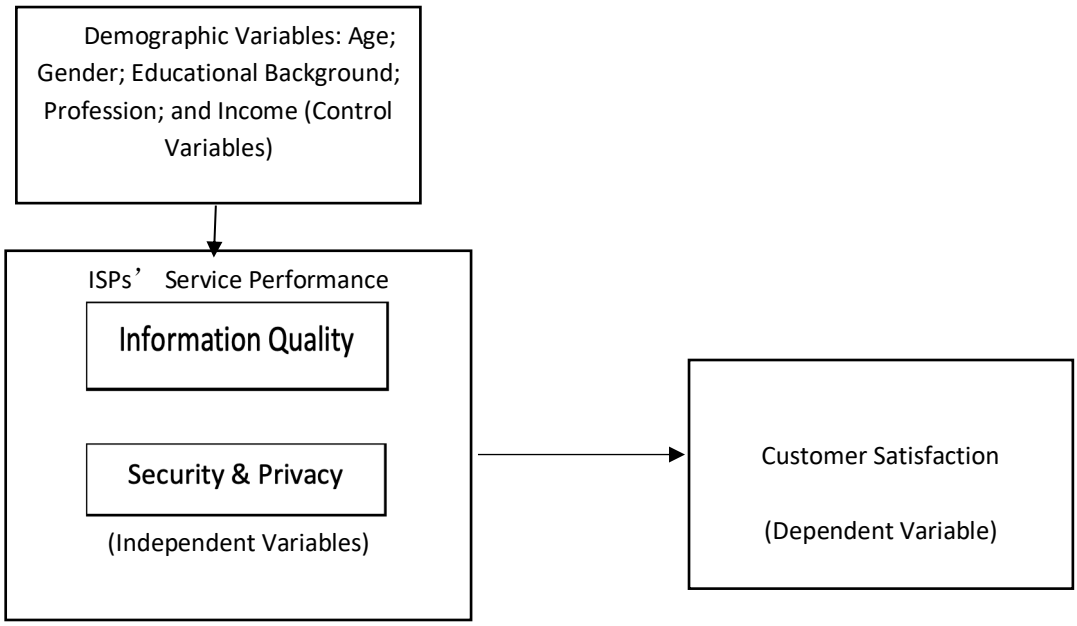

Figure 1: Conceptual Framework for an Investigation of the Extent to which ISPs' Service Performance Influences Customer Satisfaction of Quality Internet Services: A Study in Abuja, the Federal Capital Territory, Nigeria

2.3 Theoretical Framework

For the purpose of this study, the Quality Management theory was adopted for this study and critized by different scholars as follows:

i. Quality Management Theories, Models

Several QM practices have been developed based on three approaches: contributions from quality leaders, Formal evaluation models (Quality Award models); and finally, the Measurement studies. The second and third concerned by the formal evaluation models and measurement studies. The researchers reviewed contributions by quality leaders such as Deming (1986), Crosby (1979), Feigenbaum (1991), and Ishikawa (1985). In addition to the work of study measurement (Zu, 2009; Sila & Ebrahimpour, 2005; Agus, Ahmad & Muhammad, 2009), and Quality Awards frameworks reviewed such as the Malcolm Baldride Quality award Framework (MBQA), the European Business Excellence Model (EFQM**)**, & King Abdullah II Award (KAAPS).

The contributions from quality leaders have had an influence upon later studies about TQM, in such a way that the literature on TQM has gradually developed, identifying various practices for effective quality management. Quality leaders believe that management and the system are the cause of poor quality rather than the workers (Juran & Gryna, 1993). However, a brief overview of their contribution to the quality journey is given, supported by several references. Deming is well-known for his 14 points of management and the Plan-Do-Check-Act (PDCA) Cycle that is still used today. Deming believed management is responsible for 94% of quality problems, and quality must be built into the product to achieve a high level of excellence (Deming, 1986). Deming philosophy begins with top management but maintains that a company must adopt the fourteen points of this system at all levels. Deming fourteen-point plan, each of which can be derived from one or more of his SPK parts, is a complete philosophy of management, that can be applied to small or large organizations in the public, private sectors, which according to Deming (1986) "Are a signal that management intend to stay in business and aim to protect investors and jobs". Juran developed the quality trilogy - quality planning, quality control and quality improvement-, and ten steps to quality improvement (Juran, 1988). Crosby is well-known for his "Quality is free" concept and his zero defects concepts. (Tari, Molina, & Castejon, 2007; Sila, 2007; Agus, Ahmad & Muhammad, 2009).

ii. Knowledge Gap

Service performance or service quality is an important subject in both public and private sectors as it refers to how a service meets or exceeds customer needs and expectations (Zahari *et al*., 2008). In the past two decades and at present, service performance/service quality models for overall relevance within the ISPs have become a major issue for practitioners, managers and researchers because of their strong impact on business performance, lower costs, return on investment, customer satisfaction, customer loyalty and gaining a higher profit (Seth and Deshmukh, 2005).

Service management literature has shown that some of the most influential and widely used service quality models focus on the concept of a service quality gap, which describes the difference between customer expectations and perceptions of service (Pitt and Jeantrout, 1994), which has not efficiently measured service quality of ISPs or ISPs' service performance (He and Li, 2010; Thaichon *et al.,* 2014).

The literature reviewed has also shown that considerable research on service quality has been conducted by various researchers, especially in banking, hospitality, shopping and travel services amongst others (Dhurup *et al.,* 2014; Kariru and Aloo, 2014, Debasish and Dey, 2015; Aljasser and Sasidhar, 2016) but publications relating to customer perceptions of ISPs' service performance are relatively few. Although studies such as Kim *et al.* (2007); Vlachos and Vrechopoulos (2008); Thaichon *et al.* (2014) and Quach *et al.* (2016) amongst others have endeavoured to evaluate ISPs' service quality as it relates to customer satisfaction and behavioural intention at different aspects. The limitations of these studies are that some only focused on the network performance and did not consider or lay emphasis on other dimensions that could influence customers' perception of ISPs' service performance. Thus, there exists

a knowledge gap in the published literature evaluating the extent to which ISPs' service performance influences customer satisfaction. Hence, the need to undertake this study to suggest an appropriate service performance model within the ISP sector for evaluating objectively the extent to which ISPs' service performance influences customer satisfaction.

3.0 Methodology

3.1 Research Method

his research adopted quantitative method. The study depended on the active lines available to the researcher being 1,504 responses were obtained online through Google Forms by email and WhatsApp platforms. Non-probability sampling that includes Convenience Sampling and Purposive Sampling Techniques, and a five-point Likert scale were used in this study.

ISPS' Service Performance Scale

Based on the literature review, scales already tested by extant studies were adopted and adapted for ISPs' service performance as constructs for the measurement of variables in the above-mentioned conceptual framework in Figure 1 of Section 2.4 and the testing of the hypotheses formulated for this research in Section 2.5. Thus, the dimensions to test ISPs' service performance are as follows:

- **ISPs' Service Performance Scale**

Network Quality

NQ1 - No experience of Internet disconnection from my ISP.

NQ2 - The downloading and uploading Internet speed from my ISP meet my expectations.

NQ3 - Regardless peak or off-peak hours, this does not affect my Internet speed from my ISP.

Customer Service and Technical Support

CS&TS 4 - Customer service staff from my ISP are knowledgeable.

CS&TS 5 - Customer service staff from my ISP are willing to respond to my enquiries.

CS&TS 6 - There is prompt resolution of technical problems.

Information Quality

IQ7 - My ISP provides sufficient information.

IQ8 - My ISP provides up-to-date information.

IQ9 - My ISP provides relevant information.

Security and Privacy

SP10 - Personal information is protected by my ISP.

SP11 - Financial information is protected by my ISP.

SP12 - Transactions with my ISP are secured.

Source: Adapted from Thaichon *et al.* (2014).

Methods Of Data Analysis

For testing of hypothesis and modelling, multiple regression analysis was adopted. The regression models were used to analyse the hypotheses in line with objectives of this study. The model statistics (f-statistics, level of significance Adj R-square) from the regression results were used to compare models; while coefficients, p-value and 95% confidence interval were used to interpret the models.

4.0 Data Presentation, Analysis and Findings

4.1 Quantitative Analysis and Findings (Questionnaire Survey)

4.1.1 Demographic Variables

This section deals with the research participants' demographics (based on responses to questions A1, G2, EB3, P4 & IL5) and this is presented in Table below.

Table 1: Summary of Demographic

Scale Description	Frequency	Percent	Cumulative Percent
A1 - Age of respondents (A)			
16 years to 25 years	306	20.4	20.4
26 years to 35 years	412	27.4	47.8
36 years to 45 years	387	25.7	73.5
46 years to 55 years	231	15.4	88.9
56 years and above	168	11.1	100.0
G2- Gender of respondents (G)			
Male	750	49.1	49.1
Female	754	50.9	100.0
EB3 - Educational background of respondents (EB)			
A-Levels	199	13.2	13.2
HND	195	13.0	26.2
BSc	535	35.6	61.8
Master's degree	381	25.3	87.1
Doctorate degree	194	12.9	100.0
P4 - Profession of respondents (P)			
Student	231	15.4	15.4
Apprentice	193	12.8	28.2
Vocational worker	308	20.5	48.7
Public sector professional	472	31.4	80.1
Private sector professional	300	19.9	100.0
IL5 – Income Level of respondents (IL)			

Less than N29,000	217	14.4	14.4
N30,000 – 59,000	173	11.5	25.9
N60,000 – N89,000	230	15.3	41.2
N90,000 – N119,000	247	16.4	57.6
N120,000 – N149,000	221	14.7	72.3
N150,000 – N179,000	149	9.9	82.2
N180,000 – N209,000	96	6.4	88.6
N210,000 – N239,000	65	4.3	92.9
N240,000 and above	106	7.1	100.0

Table 1 presents the respondents' age profile and shows that the bulk of Internet users in Abuja (88.9% of participants) are of the age between 16 and 55 years. The gender of the respondents indicates that there is not much significant difference between the male and female respondents. This shows that both males and females are now interested and conversant in the use of Internet services as this has become necessary in our daily activities. It also presents the respondents different levels of educational status that were given opportunities to express their views and this helped in pointing out a further need to look into any significant effect that educational background might have on the perceptions, expectations of quality and Internet uptake in FCT Abuja.

The table further presents the professions of the respondents that indicates that most of the respondents (51.40%) were in the public and private sector, which implies heavy usage of Internet services among the professionals in FCT Abuja. The income level of the respondents were presented as well in the table and it indicates that most Internet users in FCT, Abuja (82.2%) are of income level that is less than N180,000 per month.

4.1.2 Outcomes of Hypotheses Analysis

ISPs' service performance is significantly related to customer satisfaction.

Testing the following hypotheses:

H_1 - Information quality is significantly related to customer satisfaction.

H_2 –. Security and privacy are significantly related to customer satisfaction.

H . Overall ISPs' service performance is significantly related to customer satisfaction.

The analysis of **Sub-Hypotheses, H_1 – H_4** are presented in Table 5.

Table 2: Analysis of Hypotheses H_1 – H_4

ISPs' Service Performance	Customers' Satisfaction		
	Coef.	*p-value*	*95% CI*
Components of Customer Service			

Knowledgeable.	-0.018	0.815	-0.164 – 0.129
Willing to respond to enquiries.	0.075	0.372	0.090 – 0.241
Resolving of technical problems	0.614	0.000	0.471 – 0.756
Components of Information Quality			
Provides sufficient information	0.070	0.401	-0.094 – 0.234
Provides up-to-date information	0.324	0.000	0.148 – 0.495
Provides relevant information	0.322	0.000	0.221 – 0.570
Components of Security and Privacy			
Personal information is protected	0.116	0.162	-0.046 – 0.279
Financial information is protected	0.316	0.001	0.127 – 0.505
Transactions are secured	0.724	0.000	0.543 – 0.907
Model statistics			
Prob>f	0.0000		
R-squared	0.7857		
Adj R-squared	0.7840		

***p<0.05 (p-value)**

Table 2 presents the analysis of Hypotheses H_1 – H_2 as follows:

H_1- Information quality is significantly related to customers' satisfaction.

The analysis reveals that there is a significant association between provision for up-to-date information ($p<0.05$) and financial information ($p<0.05$) except for sufficient information ($p>0.05$). Hence, this study rejects the non-hypothesis and accepts the hypothesis, and concludes that there is a significant association between information quality and customer satisfaction.

H_2- Security and privacy is significantly related to customer satisfaction.

The analysis reveals that protection of financial information ($p<0.05$) and transaction ($p<0.05$), except protection of personal information, are statistically significant to customer satisfaction. Hence, this study concludes that security and privacy is statistically associated to customer satisfaction.

H - Overall ISPs' service performance is significantly related to customer satisfaction.

Table 3 presents the analysis of Hypothesis H as follows:

Table 3: Overall ISPS' Service Performance is Significantly Related to Customer Satisfaction

H – Overall ISPs' Service Performance is Significantly related to Customer Satisfaction				**Model statistics**	
Customer Satisfaction	Coef.	p<0.05	95%CI	R-squared	F statistics (p<0.05)

Overall ISPs' performance quality	2.399	0.000	2.332-2.466	0.7669	4942.66	(0.000)

***p<0.05 (p-value)**

Table 3 shows that overall ISPs' service performance is significantly associated with customer satisfaction at p<0.05 and at 95% confident interval (2.332-2.466) that is' increase in ISPs' service performance, will increase customer satisfaction to 2.399. Thus, outcome of the analysis supports that the overall ISPs' service performance is significantly related to customer satisfaction.

The Extent to Which ISPS' Service Performance Relates to Customer Satisfaction in FCT Abuja, Nigeria

Table 4: The Extent to Which ISPs' Service Performance Relates to Customer Satisfaction in FCT Abuja, Nigeria

ISPs' Service Performance	Customer Satisfaction		
Components of Customer Service and Technical			
Customer service staff are knowledgeable.	-0.018	0.815	-0.164 – 0.129
Willing to respond to enquiries.	0.075	0.372	0.090 – 0.241
Prompt to resolve technical problems	0.614	0.000	0.471 – 0.756
Components of Information Quality			
Provides sufficient information	0.070	0.401	- 0.094 – 0.234
Provides up-to-date information	0.324	0.000	0.148 – 0.495
Provides relevant information	0.322	0.000	0.221 – 0.570
Components of Security and Privacy			
Personal information is protected	0.116	0.162	- 0.046 – 0.279
Financial information is protected	0.316	0.001	0.127 – 0.505
Transactions are secured	0.724	0.000	0.543 – 0.907
Model statistics			
Prob>f	455.54 (0.000)		
R-squared	0.7857		
Adj R-squared	0.7840		

***p<0.05 (p-value)**

For the components of customer service and technical support, the component that determines whether the customer service staff are knowledgeable, decreased customer satisfaction by 1.8% though it was not statistically significant (p>0.05, 95%CI: -0.164 – 0.129). Willingness to respond to enquiries shows variation in customer satisfaction by 7.5% (p>0.05, 95%CI: 0.126 - 0.504) while prompt to resolve technical problems contributes significantly by 61.4% (p<0.05, 95%CI: 0.471 – 0.756) to customer satisfaction.

With respect to information quality, the component that states providing up-to-date and provision of relevant information indicates 32.4% ($p<0.05$, 95%CI: 0.148 – 0.495) and 32.2% ($p<0.05$, 95%CI: 0.221 – 0.570) degree variation in customer satisfaction respectively. While with security and privacy, the components such as financial information protection and transactions security have a positive relationship with customer satisfaction with a degree of variation of 31.6% ($p<0.05$, 95%CI: 0.127 – 0.505) and 72.4% ($p<0.05$, 95%CI: 0.543 – 0.907) respectively.

The above explanation shows that network quality, information quality, security and privacy are the most statistically significant components of ISPs' service performance to improve customer satisfaction. An increase in any of these components will lead to an increase in customer satisfaction. Statistically, the model shows that the Internet user's satisfaction will be enhanced to 78.57% with an improvement in ISPs' service performance. Hence, ISPs' service performance can predict and increase customer satisfaction among Internet users in FCT Abuja Nigeria.

4.1.3 Findings Discussion, Limitation, Conclusion and Recommendation

ISPS' Service Performance Relationship with Customer Satisfaction

Focus: The extent to which ISPs' service performance relates to customers' satisfaction in FCT Abuja, Nigeria.

As indicated in the research objective which set out to "investigate the extent to which ISPs' service performance relates to customer satisfaction", the research attempted to discover the extent to which ISPs' service performance influences customer satisfaction. Section 2.3, identified the dimensions to measure ISPs' service performance in this research. The dimensions include network quality, customer service and technical support, information quality, security and privacy. These are dimensions, which customers expect to see when evaluating ISPs' service performance as revealed by Thaichon *et al.,* (2014) and Quach *et.al* (2016).

It was revealed through literature reviews that the important factor of business performance is that the satisfaction of customers leads to loyalty, repurchase intention and willingness to recommend to others (word of mouth) (Brady and Cronin, 2001; Kotler and Armstrong, 2007; and Ghotbabadi *et al.*, 2015). This is supported by Wiele *et al.* (2002) who state that there is a significant relationship between customer satisfaction and ISPs' service performance as Buhaljoti (2019) supported by stating that customer satisfaction is highly influenced by the quality of service and is most important determinant that enhances customer satisfaction. This established that ISPs' service performance is related to customer satisfaction (Abdul *et al.,* 2014).

The sub-hypothesis $\mathbf{H_2}$ that shows that customer service and technical support does not significantly influence customer satisfaction supports the study of Kim *et al.* (2007) that laid emphasis only on network performance and ignored customer service performance in their study's conceptual framework when evaluating service performance of ISPs.

This sub-hypothesis $\mathbf{H_2}$ also supported the study of Vlachos and Vrechopoulos (2008) as they regard network performance as one of the most important drivers of the

overall ISPs' service quality and did not put much emphasis on customer service performance.

The outcome of this research shows little variation from the study of Thaichon *et al*. (2014) that considered customer service and technical support as one of the key components when evaluating ISPs' service quality. However, this current research reveals that the key components that predict customer satisfaction when evaluating ISPs' service performance are network quality; information quality; security and privacy as, statistically, customer service and technical support does not significantly influence customer satisfaction.

This research confirms via quantitative analysis in Section 4.5.2, Table 4 that the ISPs' service performance could explain 78.57% variations in customer satisfaction and this degree of variation was statistically significant (f-statistic=455.54, $p<0.05$). Thus, ISPs' service performance can predict and increase satisfaction among Internet users in FCT Abuja, Nigeria.

5.0 Conclusion and Recommendation

The research findings provide a framework and methodology for evaluating the extent to which Customer Satisfaction is influenced by ISPs' service performance within the ISP Sector. This will allow the projection of anticipated future needs and actual satisfaction of customers.

It reveals key components of ISPs' service performance that must be considered when evaluating, such as network quality, information quality, security and privacy. It reveals that customer service and technical support do not significantly influence customer satisfaction.

Therefore, it is recommended that ISPs must improve service performance on the key components or dimensions indicated above in order to increase customer satisfaction since customers expect more, irrespective of what they have been getting. This will enable ISPs to maintain a high level of competitiveness.

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