

ASSESSMENT OF THE INFLUENCE OF DIGITAL TRIP TICKETING OF PEACE MASS TRANSIT ON PASSENGERS' SATISFACTION IN ABUJA METROPOLIS, NIGERIA.

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Abstract

Service quality is a significant factor to passenger satisfaction and when passengers are satisfied with services offered, their level of patronage will increase. Thus, led to this study in order to evaluate the influence of digital trip ticketing of Peace Mass Transit (PMT), Abuja on passengers' satisfaction. This study adopts the survey design approach. The study collected primary data with the use of questionnaires, oral interview and field observations. A sample of 400 passengers were randomly selected for the purpose of the study. Data collected included socio-economic information of passengers, passengers' perception on booking online, effects of digital system on passengers' patronage, and factors limiting the use of digital platforms in Nigeria. Both descriptive and inferential statistical tools were used to analyze data from field work. The SERVQUAL Model was used to analyze the level of passenger satisfactions with the service quality. Findings shows that 56% of passengers sampled were within age group 21-40 years, 79% of passengers had higher degree qualifications, 37% of passengers were earning below N50,000 monthly, 45% were involved in both online and manual ticketing methods while 45% of passengers' travels between 50 and 100km above. Passengers are generally not fully satisfied with the digital ticketing services of PMT, with an overall gap score of -0.75. All service attributes are below passenger's expectation with negative attributes gap score, only security of passenger information and user friendliness of website met passenger expectations. It is therefore concluded that service quality is a significant factor to passenger satisfaction and when passengers are satisfied with services offered to them their level of patronage will increase. The study further recommends that incentives such as discounts should be provided by transport companies so as to improve passengers' usage of digital ticketing systems, customers satisfaction on services offered must be the core value which drives transport operation principles.

Keywords: Customers, Service-Quality, Satisfaction, e-ticketing, Peace Mass Transit

1. INTRODUCTION

Movement from one place to another through public transport forms part of the day-to-day activities of most individuals in the developed and developing countries. Public transport operations play important role in providing transport for commuting passengers (Aworemi, Abdul-

azeez and Olaogun, 2009). Presently, major investments and technological innovations were being made in bus systems to make them more competitive in Nigeria as a result new services are being developed and old ones are being improved. Hence, the introduction of e-ticketing services in Nigerian public transport services.

Digital trip ticketing also known as online booking or e-ticketing is making waves in nearly all the sectors of transportation (road, water, air and rail). It started with the US Airways in 1970 and found it ways to Nigeria in early 2000 and booming until now. With the sudden growth in electronic commerce (e-commerce) globally, businesses are now making efforts to gain a competitive advantage by using e-commerce to interact with customers (Aijunaid, 2006). Today, the internet is not considered as only a networking medium again but also as a medium of transaction for online consumers (Chan et al., 2013).

Electronic ticketing systems (e-ticket system) are particularly famous for travelers in the world. It is a shift from traditional ticketing system to modern ticketing systems used by organizations around the world. Electronic ticketing system began in accordance with the development of the internet. It is widely recognized that e-ticketing can deliver benefits to passengers and public transportation operators through time savings, increased travel convenience, more flexible ticketing, lower administrative costs, and better marketing information (Meeker, 2015). Consequently, with the evolution of the internet and smartphones applications, the consumers' behavioral habits have changed in the goods and services purchasing power. Consumers' on-line purchases had increasing globally, without boundaries. Passengers can now purchase their transport ticket through mobile phone and pay on-line to book, validate and retrieve tickets using simple mobile applications and websites (Ceipidor et al., 2013).

Digital trip ticketing is now a substitute to the paper-based receipt or tickets received by passengers for the purchase of travel services. Digital trip ticketing is a paperless electronic document used for ticketing passengers and particularly in the transport industry. By having e-ticket, it makes the traveler not to bring physical paper, instead they just need to bring the bar code or the transaction ID that have been given to them (Cosmas et. al., 2015). In Nigeria today, the use of internet has greatly increased compared to early 2000s (Ibrahim and Ta'a, 2015). Online booking is now commonly used in the transport sector in Nigeria not only in road transport service section but also airline industries, and rail sector. The spreading usage of booking brings benefits to those who are using the services. The effectiveness, reliability, convenience and safety make online booking to be widely accepted (Putri and Karim, 2019).

Most transportation service providers in Nigeria still use the traditional ticket system, which use a paper-based ticket. The problem with the traditional ticket in bus service system (manual ticket) is prospective travelers spends hours on queue to purchase the ticket, travel information is not available to them at a glance for buses schedule (Awakan, 2021). Also, another challenge with manual ticketing system is each branch work separately, communication must be made by each branch's desk-officer to the head office for each customer's enquiry in order to get the latest update on schedule, seat availability and other reservation-related information; as well as to avoid duplicate bookings or over-capacity (Alaya, 2014). Moreover, there is also a physical limit to the reservation availability as each branch only operates during certain hours and reservations can only be made on-the-spot. These limitations have placed e-ticketing in a more advantageous position, as such, it is projected that the use of e-tickets will only continue to increase over time (Bukhari, et. al., 2013).

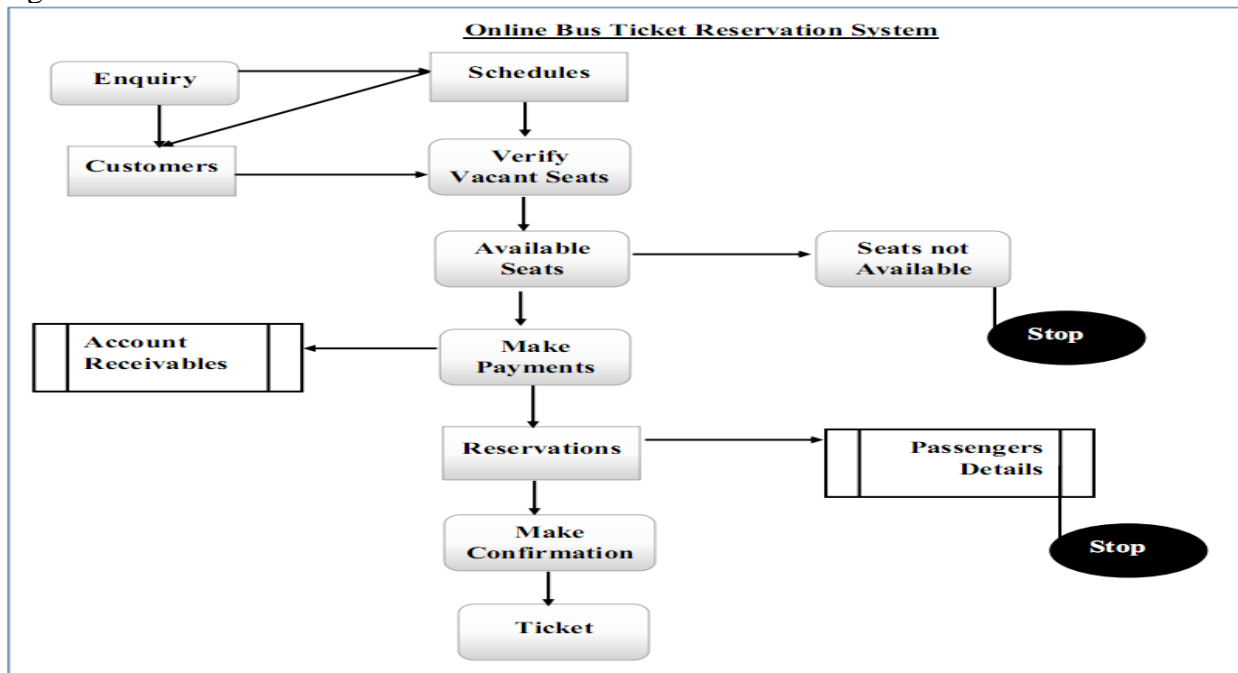
Even though e-ticketing services appear to be the future of operations for many organizations seeking to streamline operations and improve customer service, research regarding e-ticketing and e-service indicates that these processes have not been without their challenges (Qteishat, Alshibly and Al-ma'aitah, 2014). More so, the issue of customer satisfaction in e-ticketing has become a central issue of focus, prompting organizations and researchers to investigate the impact of digital trip ticketing on passengers' satisfaction of public transportation in Nigeria. Hence, it is imperative to investigate the influence of digital trip ticketing on passengers' satisfaction in order to understand its dynamism and provide answers to the influence e-ticketing has on customer satisfaction in the Nigerian public transport system.

2. LITERATURE REVIEW

2.1 Conceptual Framework

Digital bus ticketing and payment system is a computerized system used to store and retrieve information and conduct transactions related to bus travel (Eze, Okeudo and Amadi, 2015). The bus reservation system is shown in the flow diagram in Figure 1. Data flow diagram is used to show the flow of data from external entities into the system. It is used to represent the physical and logical area of an information system. This indicates a flow diagram representation of the Online Bus Ticket Reservation System as adopted from Eze et al., (2015). The data flow diagram covers all the processes which takes place during any transaction in the system.

Figure 1: Process Model



Source: Eze et al, (2015)

Figure 1 shows that the most common activities carried out by customers include; the customer can make enquiry for the seat, can check for the available seat, can also do payment for the seat, and can print receipt (ticket) as evidence of payment for a reservation. The system therefore, can verify customers and allow them to login to the system, confirm available seats, give acknowledge to any payment customers makes on the system, and finally generate report in form of receipts or tickets.

2.2 Empirical Review

Digital bus ticketing and payment system is synonymous to an online reservation system or computer reservations system (CRS) or central reservation system. Also, the idea of digital bus ticketing and payment system was originally designed and operated by airlines operators before its use was later extended to road transport travel agencies (Wikipedia, 2011). Pedone (2001) asserted that the widespread use of Internet has led to the emergence of a variety of electronic

services (e-services). Electronic ticket, or e-ticket, is an example of such a class of e-services. Users can get the e-tickets by purchasing them from a web server, or simply receiving from a vendor, or from another user who previously acquired them. E-tickets can be stored in desktop computers or personal digital assistants for future use (Turner and Wilson, 2010).

Ahmad and Hamzah (2020), asserted that among the advantages of digital bus ticketing are; convenience as it can be done by anyone and anywhere with an internet connection, customers can compare bus services and fare rates, saves the time and trouble to find a suitable travel agent, cheaper fares rates as some websites give lower rates for certain packages. Digital ticketing system is an acceptable shift from traditional ticketing systems (paper system) as it poses a lot of advantages which customer benefits from for example it helps customers avoid long queues at bus terminals trying to process bus tickets (Zongo and Nasse, 2019). In addition, with a better ticketing system transport companies can enhance their service quality which may lead to better passengers' satisfaction (Wojuade and Badiora, 2017).

Customer satisfaction in e-ticketing and e-service have been reviewed by Qteishat et al., (2014), they argue that patterns of customer satisfaction in e-service are similar to those that develop in face-to-face transactions and interactions. Bernardo, Llach, Marimon and Alonso-Almeida (2013) opined that the satisfaction in e-services is shaped by services provided to customers before and after a sale, as well as the general environment in which the transaction takes place. Thus, customer satisfaction and customer retention are integrally related when it comes to the development of e-services (Enzmann and Schneider, 2005).

Chen, (2012) stated that the relationship between customer satisfaction and customer retention for e-services and e-ticketing appears to stem from commitment, trust, involvement of the

organization, and the perceived value of the service provided. As such, companies offering e-ticketing services must carefully consider elements of customer support and service to build strong relationships with consumers. Noor and Azila (2012) argue that in order to achieve this outcome, companies offering any type of e-service must be able to build comprehensive relationships with customers. This insight effectively supports what Kolsaker, et al. (2004) noted about the need for customer support and service in e-ticketing.

Even though many organizations believe that customer service and support is not needed with e-ticketing, in actuality there is an absolute drive to develop customer service and support that targets customer needs for e-ticketing to ensure the development of commitment and trust leading to increased customer satisfaction and customer retention. Murambi and Bwisa (2014) discovered that travel time, punctuality, availability of information at booking office, information signage, good staff behavior, frequency of route change and security determine passengers' satisfaction of shuttle bus services

3. THE STUDY AREA

Abuja city, capital of Nigeria, lies in the central part of Nigeria, in the Federal Capital Territory (FCT; created 1976). The city is approximately 300 miles (480 km) northeast of Lagos, the former capital (until 1991). During the 1980s the new capital city was built and developed on the grass-covered Chukuku Hills. The site was chosen for Nigeria's new capital because of its central location, easy accessibility, salubrious climate, and low population density and the availability of land for future expansion. It was the first planned city to be built in Nigeria. Abuja lies at 1,180 feet (360 metres) above sea level and has a cooler climate and less humidity than Lagos.

The city's Central Area contains the city hall, national cultural institutes, and other government-related offices. It also contains the Three Arms Zone, which is home to the Presidential Palace, the National Assembly, the Supreme Court, the National Christian Centre, the National Mosque, and Millennium. Nnamdi Azikiwe International Airport is the main airport serving Abuja and the surrounding capital regions. It was named after Nigeria's first president, Nnamdi Azikiwe. The airport has International and Domestic terminals. Abuja is also linked to Nasarawa, Plateau, Benue and other states in Northeast Nigeria by the A234 Federal Highway. The A2 expressway links Abuja with Kaduna in the north and Lokoja in the south. There are also other highway links with the outlying regions.

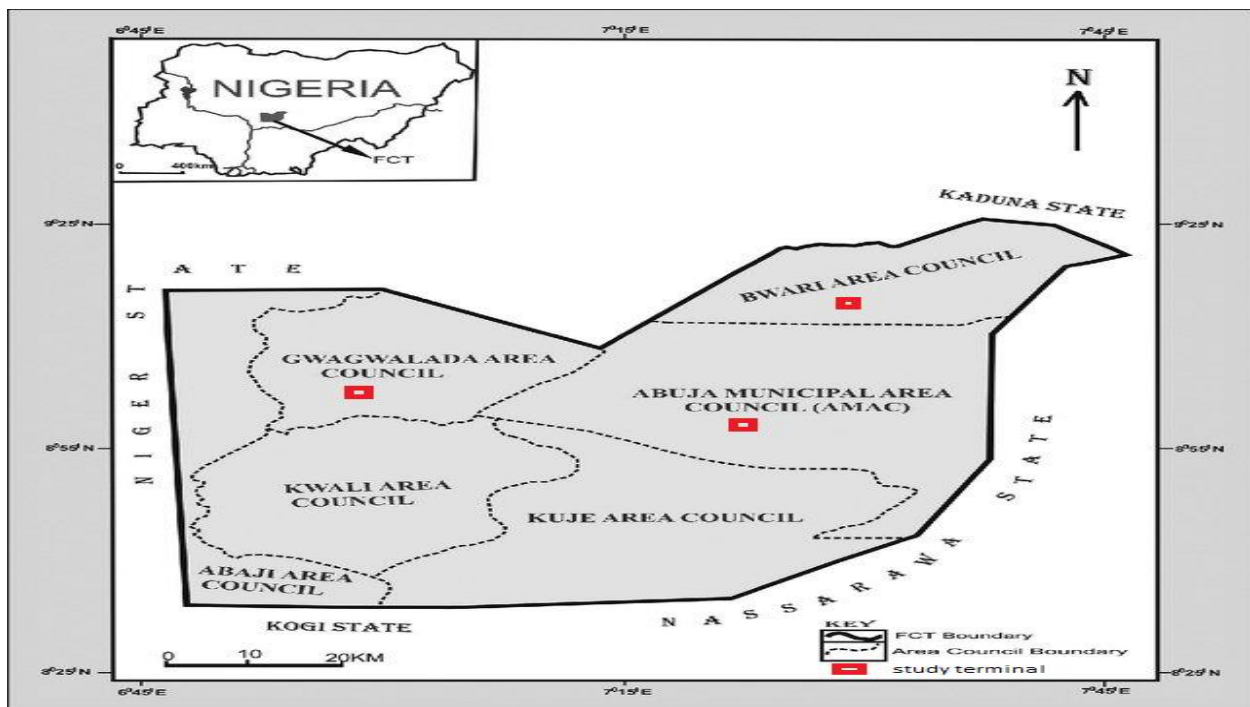


Figure 2. Map of Abuja showing studied Terminals

Source: FCDA, Abuja (2021)

4. METHODOLOGY

A survey research design was adopted for this study which allows effective data collection and analysis (Gideon, 2012). The scope of the study was limited only to the Online Bus Ticket Reservation Services provided by Peace Mass Transit (PMT) in Nigeria. The study selected

three terminals (i.e., Bwari, Gwagwalada and AMAC) of Peace Mass Transit in Abuja, Nigeria. The level of passengers' satisfaction with service quality was measured using the SERVQUAL model. Primary data were sourced through administration of structured questionnaires to passengers using simple random sampling techniques. Passengers were randomly selected at the terminals for questionnaire administration and through interview. Passengers waiting in buses and at the waiting area for loading before takeoff were selected for this study. Other passengers were selected from ticketing queues and passengers arriving from vehicles and waiting for offloading.

Secondary data were collected from documented records of Peace Mass Transit Nigeria and from related literatures, published journals, online articles, textbooks and magazines. The population of passengers per annum during the period of research were obtained from Peace Mass Transit at the three designated terminals; Bwari terminal has an estimated annual passenger of 43,800, Gwagwalada terminal has about 54,750 passengers per annum while at AMAC terminal estimated annual passenger is about 65,700. While, the aggregate population for this study is 164,250 passengers per annum. Due to the large number of population (passengers), Taro Yamane (1967) sample size formula was used to determine the suitable sample size for the study.

The formula is presented as follows:

$$n = \frac{N}{1+N(e)^2}$$

Where;

n = sample size,

N = population of the study, and

e = level of significance or (limit of tolerable error) = 0.05.

So, from the equation,

Where;

N=164250, and

e=0.05.

The sample size is calculated as follows;

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{164250}{1+164250(0.05)^2}$$

$$n = \frac{164250}{1+164250(0.0025)}$$

$$n = \frac{164250}{411.625}$$

$$n = 399.028$$

n ≈ 400 (sample size).

Therefore, the sample size used for the study is 399 passengers.

4. RESULTS AND DISCUSSION

4.1 Socio-economic Characteristics of Respondents

Table 1 Socio-economic Characteristics of Passengers

Variable	Attribute	Frequency	%
Gender N = 400	Male	244	61.0
	Female	156	39.0
Age N = 400	<20 years	40	10.0
	21-30 years	208	52.0
	31-40 years	56	14.0
	41-50 years	52	13.0
	> 50 years	44	11.0
	Education Status N = 400	No Formal Education	16
Primary		24	6.0
Secondary		44	11.0
OND/NCE/HND		156	39.0
BSc		84	21.0
Above 1 st Degree		76	19.0
Occupation N = 400		Student	108
	Business/Trader	44	11.0
	Self Employed	88	22.0
	Privately Employed	36	9.0
	Civil Servant	88	22.0
	Unemployed	36	9.0
	Income N = 400	<N50,000	148
N51,000-N100,000		136	34.0
N101,000-N150,000		32	8.0
N151,000-N200,00		32	8.0
N201,000-N250,000		16	4.0
>N250,000		36	9.0
Marital Status N = 400	Married	124	31.0
	Single	196	49.0
	Divorced	48	12.0
	Separated	24	6.0
	Widow/Widower	8	100.0

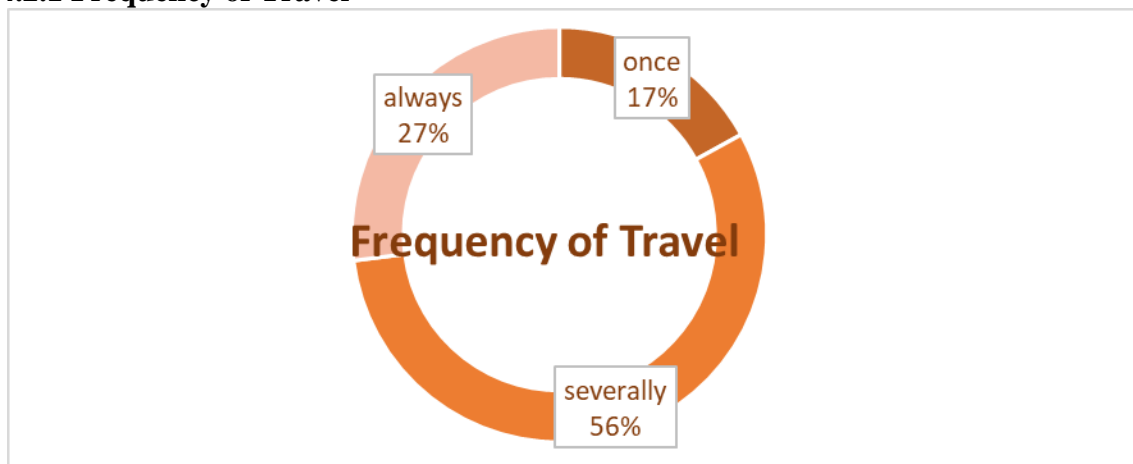
Source: Author's Computer Analysis (2021)

Table 1 shows the age group of the respondents. The predominant age group is between 21 – 30 years with 52%, followed by 31-40 years respondents representing 14%. From this analysis, it can be deduced that the active population is between age 21-40 years which is 66%. The implication of this findings is that the youths tend to engage more in digital e-ticketing as a result of their exposure and creativities with various mobile or digital applications. Gender distribution of passengers sampled shows preponderance of Male (61%) to Female (39%), while, the Marital Status indicates majority of passengers were single (49 %) followed by Married individuals (31%).

The educational qualification of passengers sampled indicates that 79% of passengers had higher degree qualification. This implies that online bookings activities were basically common among the educated class. More so, the monthly income shows that 37% of passengers were collecting below N50,000 while, 34% collects between N50, 000 - N100,000 monthly as income. In the term of occupation 27% were students, 22% self-employed and civil servant respectively.

4.2 Travel Characteristics of Passengers

4.2.1 Frequency of Travel

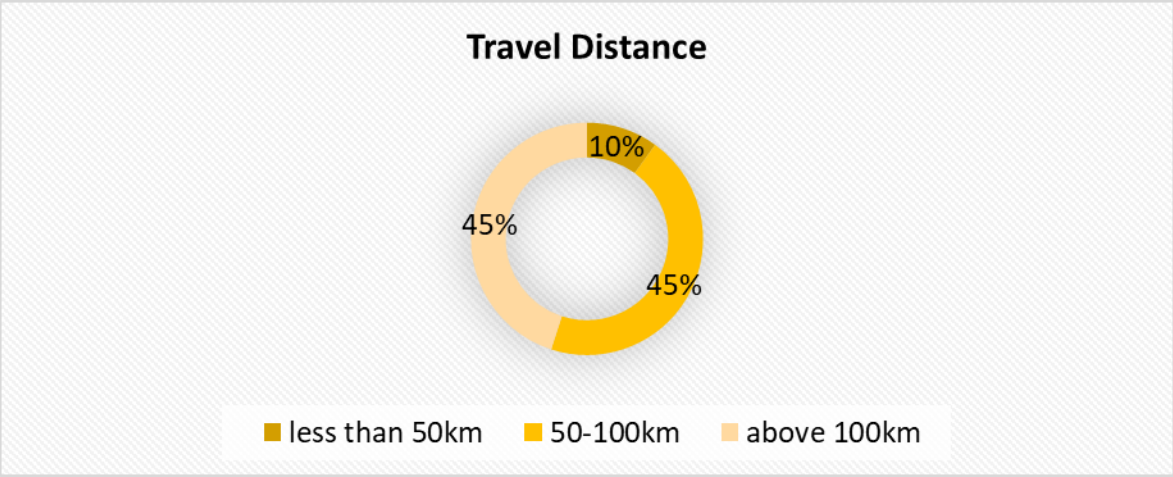


Source: Author's computation, (2021)

Figure 3: Frequency of Travel

Figure 3 shows that 17% of the passengers only traveled once with Peace Mass Transit, 56% had used PMT severally. While, 27% of were of the opinion that they always use Peace Mass Transit anytime they were traveling. This implies that a good number of the respondents used the Peace Mass Transit service more frequently. The online booking operation is hence considered an important transportation service as it reveals the high frequency of its usage.

4.2.2 Travel Distance



Source: Author’s computation, (2021)
 Figure 4 Distance traveled by Passengers

Distance traveled by Passengers as shown in Figure 4 reveals that 10% of respondents usually travel less than 50km, 45% travelled between 50 – 100km while, 45% passengers travelled above 100km. this finding implies that majority of the passengers patronizing PMT were for long distance travels. Hence, the essence of using e-ticketing in order to ameliorate the rigor involve in physical booking and obtaining ticket.

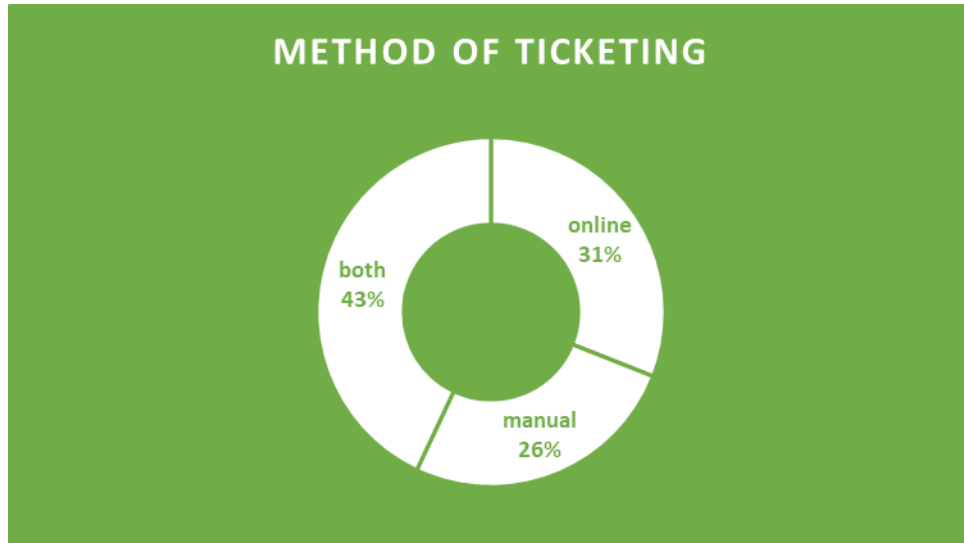
Table 2 Passengers Journey Purpose

Education	44%
Social	15%
Business	25%
Others	16%

Source: Author’s Computation, (2021)

Table 2 indicates that 44% of passengers travelled for educational purposes, 25% travels for business purposes while, 15% and 16% travels for social functions and other purposes respectively. This implies that the main reason while passengers' travels is majorly for educational purposes and business activities.

4.3 Method of Bus Ticketing



Source: Author's computation, (2021)

Figure 5 Method of Bus Ticketing Used

Figure 5 shows that 31% of the passengers used online bus ticketing method, 26% involves in manual bus ticketing while, 43% of the passengers used both digital and manual bus ticketing system. This implies that majority of passengers using Peace Mass Transit engaged in both online and manual ticketing system. This invariable shows high acceptability level of the e-ticketing system among passengers.

4.4 Passengers Service Satisfaction

The level of passengers' satisfaction with the digital trip ticketing system of PMT was analyzed using the SERVQUAL Model. 15 factors were imputed and considered in the analysis as shown in Table 3.

Table 3 SERVQUAL Model Attributes

S/N	Serv-Qual Attribute
1.	Booking online should be Convenient and Suitable to use
2.	Company should always adhere to travel schedules online
3.	Booking website should be User Friendly and Simple to browse
4.	Online booking service should be Reliable
5.	Booking processing time should be very minimal
6.	Website should be readily accessible at all times
7.	Website usage should be cheap for customers
8.	Adequate travel information should be provided
9.	Passengers' information should be secured and safe
10.	Processing of e-ticket at the terminal should be on time
11.	Booking system should be very organized
12.	e-payment system should be reliable
13.	e-transaction dispute should be resolved easily and fast
14.	There should be provision for complaints on the booking website
15.	Customer complaints should be resolved with ease and quickly

Source: Author's Computation, (2021)

Table 4 Summary of Means of Passengers' Expectation/Satisfaction Using Gap Score

Attributes	Expectation	Satisfaction	Gap
Booking online should be Convenient and Suitable to use	3.88	3.25	-0.63
Company should always adhere to travel schedules online	4.02	2.9	-1.12
Booking website should be User Friendly and Simple to browse	3.63	3.77	0.14
Online booking service should be Reliable	3.79	2.51	-1.28
Booking processing time should be very minimal	3.04	2.91	-0.13
Website should be readily accessible at all times	3.37	3.26	-0.11
Website usage should be cheap for customers	3.62	3.41	-0.21
Adequate travel information should be provided	3.48	3.39	-0.09
Passengers' information should be secured and safe	3.76	3.76	0
Processing of e-ticket at the terminal should be on time	3.87	2.75	-1.12
Booking system should be very organized	3.65	2.26	-1.39
e-payment system should be reliable	3.83	3.51	-0.32
e-transaction dispute should be resolved easily and fast	4.05	2.37	-1.68
There should be provision for complaints on the booking website	3.98	2.24	-1.74
Customer complaints should be resolved with ease and quickly	3.75	2.18	-1.57

Source: Author's computation, (2021)

Table 4 shows the summary of Means of Passengers' Expectation/Satisfaction Using Gap Score of digital trip ticketing service of PMT. The table also, determine passengers' expectation against their performance and the gap between them. Expected values and the satisfied values were measured using the Likert scale with 5 points against each individual attribute. The higher number in Likert scale means high level of expectation or perception. The passengers expected more from the organizations than they perceive in general. Due to the high expectation of passengers, the result of gap score is negative in most cases. Negative score means that the passengers were not satisfied which mean that there should be some improvement in the services offered.

The attributes with the highest expectation value were e-transaction dispute should be resolved easily and fast (4.05), Company should always adhere to travel schedules online (4.02), There should be provision for complaints on the booking website (3.98), Booking online should be Convenient and Suitable to use (3.88), Processing of e-ticket at the terminal should be on time (3.87), e-payment system should be reliable (3.83), Online booking service should be reliable (3.79), Passengers information should be secured and safe (3.76), Customer complaints should be resolved with ease and quickly (3.75), Booking system should be very organized (3.65), Booking website should be User Friendly and Simple to browse (3.63), Website usage should be cheap for customers (3.62), Adequate travel information should be provided (3.48), Website should be readily accessible at all times (3.37), Booking processing time should be very minimal (3.04).

Furthermore, attributes with the highest satisfied value were ranked in the following manner: Booking website should be User Friendly and Simple to browse (3.77), Passengers information should be secured and safe (3.76), e-payment system should be reliable (3.51), Website usage should be cheap for customers (3.41), Adequate travel information should be provided (3.39), Website should be readily accessible at all times (3.26), Booking online should be Convenient and

Suitable to use (3.25), Booking processing time should be very minimal (2.91), Company should always adhere to travel schedules online (2.90), Processing of e-ticket at the terminal should be on time (2.75), Online booking service should be Reliable (2.51), e-transaction dispute should be resolved easily and fast (2.37), Booking system should be very organized (2.26) and There should be provision for complaints on the booking website (2.24). Finally, Customer complaints should be resolved with ease and quickly (2.18).

The gap score is measured by taking the difference between the satisfaction and expectation score. The gap score reflects the passengers' satisfaction and quality of the service provided by the organization. The lower value of gap score showed that the service quality is approximately equal to the customer expectations. Booking website should be User Friendly and Simple to browse which is 0.14, shows a positive result, it implies that passengers are more satisfied than they have expected. The largest difference was there should be provision for complaints on the booking website, this shows that the firms meet passengers' expectation least in this area. Other attributes show a gap score of adequate travel information should be provided (-0.09) and Website should be readily accessible at all times (-0.11).

Booking processing time should be very minimal (-0.13), Website usage should be cheap for customers (-0.21), e-payment system should be reliable (-0.32), Booking online should be Convenient and Suitable to use (-0.63), Company should always adhere to travel schedules online (-1.12), Processing of e-ticket at the terminal should be on time (-1.12), Online booking service should be Reliable (-1.28), Booking system should be very organized (-1.39), Customer complaints should be resolved with ease and quickly (-1.57), e-transaction dispute should be resolved easily and fast (-1.68). Passengers' information should be secured and safe had 0 score. This implies that passengers' expectations were completely met.

Finally, the overall service quality is measured by calculating the average gap score of all SERVQUAL dimensions. The overall summary of all items of these attributes shows a value of -0.75. This implies that comparing the expectation of the passengers and the satisfaction level, for there to be a balance the summary value must be a positive value. Hence there is a need to improve the services quality to match up or even surpass the passengers' expectation.

4.5 Factors Limiting the Use of Digital Trip Ticketing

Table 5 shows the different factors identified as limiting the use of digital trip ticketing among PMT passengers. The mean item scores of these various factors limiting the use of digital trip ticketing were shown in Table 5.

Table 5 Descriptive Statistics of Factors Limiting the Use of Digital Trip Ticketing

Factors	Mean	Std. Dev.	Rank
Lack of adequate travel information	3.17	1.096	1 st
Confidence on the safety of information provided	2.54	1.163	2 nd
Time spent of the site	2.46	1.128	3 rd
Difficulties in payment	2.33	1.079	4 th
Accessibility of the site	2.32	1.305	5 th
Difficulty of accessing webpage	2.27	1.183	6 th
Complexity of the system	2.25	1.154	7 th
Level of education	2.12	0.963	8 th
Friendliness of the site	2.00	1.274	9 th
Cost of purchasing data	1.92	1.047	10 th
Nature of the device you are using	1.88	1.212	11 th
Connectivity issue, network or internet	1.84	1.157	12 th
Valid N (listwise)	400		

Source: Author's computation, (2021)

Table 5 shows that lack of adequate travel information (mean = 3.17, std. dev. = 1.096) ranked 1st. This implies that among all the factors limiting the use of digital trip ticketing, lack of adequate travel information is the predominant factor that affects passengers in the study area. Confidence on the safety of information provided by passengers ranked 2nd, while, time spent on the booking

site (mean = 2.46, std. dev. = 1.128) ranked 3rd. While, Difficulties in payment (mean = 2.33, std. dev. = 1.079) ranked 4th and accessibility of the site (mean = 2.32, std. dev. = 1.305) ranked 5th. Furthermore, difficulty in accessing webpage (mean = 2.27, std. dev. = 1.183) ranked 6th, Complexity of the system (mean = 2.25, std. dev. = 1.154) ranked 7th and Level of education (mean = 2.12, std. dev. = 0.963) ranked 8th. Also, Friendliness of the site (mean = 2.00, std. dev. = 1.274) ranked 9th, Cost of purchasing data (mean = 1.92, std. dev. = 1.047) ranked 10th, Nature of the device you are using (mean = 1.88, std. dev. = 1.212), and Connectivity issue, network or internet (mean = 1.84, std. dev. = 1.157) ranked 11th and 12th respectively. However, low mean values of the factors depict that limiting factors in the study area poses low challenges to passengers.

5. CONCLUSION AND RECOMMENDATIONS

Public transportation is a significant part of the transportation system in Nigeria, and nowadays, bus companies are taking important role in public transportation. Hence, to make reservation reliable they need a strong electronic system which will make reservation easier, faster and safer. This led to the growing trend in the introduction and adoption of digital reservation system by bus companies in Nigeria. It is observed that there is a significant gap between passengers' expectation with the service rendered by Peace Mass Transit and the actual satisfaction passengers get from the services provided to them.

The study concludes that that service quality is a significant factor which determines passengers' satisfaction. Hence, if passengers were satisfied with the service offered their level of patronage and loyalty to the brand will significantly increase. Therefore, transport companies should ensure that necessary actions are taken in order to achieve high effectiveness and efficiency in service delivery in order to meet customers' satisfaction.

Based on the findings in the study the following recommendations were made;

- i. Transport companies should encourage the use of digital ticketing systems among passengers through incentives such as discounts so as to improve passenger usage.
- ii. Customers satisfaction on services offered must be a core value which drives core transport operation principles.
- iii. Comprehensive travel information must be provided to users of e-ticketing services at a glance in order to instill confidence and assurance to users.
- iv. Adequate internet firewall security and end-to-end encryption must be provided to ensure passengers personal information of passengers are well protected during and after usage of e-ticketing platform.

REFERENCE

- Ahmad, N. A. N. and Hamzah M. F. (2020). Modernization of Ticketing System Using Re-Engineering Approach. *Journal of Computing Technologies and Creative Content*, 5(2), 13-17.
- Alaya, S. M. (2014). Development of an Online Bus Ticket Reservation System for a Transportation Service in Nigeria, 5(12), 9–18.
- Awakan, V. (2021). Developing a Digital Transport Ticketing System in Lagos State. Bachelor's Degree Thesis, Department of Mechanical Engineering, Slavonia University of Applied Science.
- Aworemi, J. R., Abdul-Azeez, I. A., & Olaogun, O. B. (2009). A study of the performance of public transport company in Niger State, Nigeria. *International Journal of Business and Management*, 4(11), 73-80.
- Bernardo, M., Llach, J., Marimon, F., & Alonso-Almeida, M. M. (2013). The balance of the impact of quality and recovery on satisfaction: The case of e-travel. *Total Quality Management & Business Excellence*, 24(11-12), 1390-1404.
- Bukhari, S. M. F., Ghoneim, A., Dennis, C., & Jamjoom, B. (2013). The antecedents of travelers' e-satisfaction and intention to buy airline tickets online: A conceptual model. *Journal of enterprise information management*, 26(6), 624-641.
- Ceipidor, U. B., Medaglia, C. M., Volpi, V., Moroni, A., Sposato, S., Carboni, M., & Caridi, A. (2013). NFC technology applied to touristic-cultural field: A case study on an Italian museum. In *2013 5th international workshop on near field communication (NFC)* (1-6). IEEE.

- Chan, F. T., & Chong, A. Y. L. (2013). Analysis of the determinants of consumers' e-commerce usage activities. *Online Information Review*.
- Chen, H. (2012). The Influence of Perceived Value and Trust on Online Buying Intention. *J. Comput.*, 7(7), 1655-1662.
- Cosmas, N. I., Etus, C., Ajere, I. U., & Godswill, A. U. (2015). Online bus ticket reservation system. *International Journal of Computer Science and Statistics*, 1(2), 1-18.
- Enzmann, M., & Schneider, M. (2005). Improving customer retention in e-commerce through a secure and privacy-enhanced loyalty system. *Information Systems Frontiers*, 7(4), 359-370.
- Eze, U. F., Okeudo, G. N. and Amadi, E. C. (2015). Contemporary Approach to Enhanced Road Transport System in Nigeria through the Application of It-Based (Online) Bus Ticketing and Payment System. *International Journal of Sustainable Development & World Policy*, 1(1), 1-28.
- Gideon, L. (2012). Handbook of survey methodology for the social sciences. New York: Springer.
- Ibrahim, A. K., & Ta'a, A. B. (2015). Mobile-based bus ticketing system in Iraq. *European Journal of Computer Science and Information Technology*, 3(5), 42-55.
- Meeker, M. (2015). 2015 Internet Trends - Kleiner Perkins Caufield Byers. Retrieved March, 2021, from <http://www.kpcb.com/internet-trends>
- Murambi, D. N., & Bwisa, H. M. (2014). Service quality and customer satisfaction in public transport sector of Kenya: A Survey of shuttle travelers in kitale terminus. *International Journal of Academic Research in Business and Social Sciences*, 4(9), 402.
- Noor, N. A. M., Muhammad, A., Kassim, A., Jamil, C. Z. M., Mat, N., Mat, N., & Salleh, H. S. (2012). Creating green consumers: how environmental knowledge and environmental attitude lead to green purchase behaviour? *International Journal of Arts & Sciences*, 5(1), 55.
- Pedone, M. T. (2001). Valentine v. On Target, Inc.: It is Time to Hold Gun Dealers Accountable for the Negligent Storage of Firearms. *Md. L. Rev.*, 60, 441.
- Putri, Y. H. and Karim, S. (2019). The Effect of Gamification on User Satisfaction on Online Travel Agent. *Advances in Economics, Business and Management Research*, 142, 361-367.
- Qteishat, M. K., Alshibly, H. H., and Al-ma'aitah, M. A. (2014). The Impact of E-Ticketing Technique on Customer Satisfaction: An Empirical Analysis. *JISTEM - Journal of Information Systems and Technology Management*, 11(3), 519-532. DOI: 10.4301/S1807-17752014000300001
- Turner, M., and Wilson, R. (2010). Smart and integrated ticketing in the UK: Piecing together the jigsaw. *Computer Law & Security Review*, 26(2), 170-177. doi: 10.1016/j.clsr.2010.01.015

Wojuade, C. A. and Badiora, A. I. (2017). Users' Satisfaction with Public Transport Operations in Ibadan, Nigeria. *The Journal of Social Sciences Research*, 3(9), 88-96.

Yamane, T. (1967). *Statistics: An introductory analysis* (No. HA29 Y2 1967).

Zongo, N. K. and Nasse, T. B. (2019). Online Ticketing and Customer Satisfaction Analysis: An Exploratory Research Concerning Customers in the Context of Burkina Faso. *International Journal of Management & Entrepreneurship Research*, 1(4), 151-165.