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Airport service quality and patronage in Nigeria

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ABSTRACT

The study assesses factors influencing airport service quality and airport patronage by passengers and airlines. Data for the study were collected by systematic random sampling from the management of Federal Airport Authority of Nigeria (FAAN), airlines and passengers with the use of questionnaire. The study showed the factors impeding the services rendered in both Abuja and Lagos Airport. It also showed the factors that airlines and passengers considered in choosing the airport to operation. It was discovered that none of the factor considered for passengers' patronage of the airport is significant. This calls for stable policies to ensure stability of the services rendered.

Keywords: Airport; Service Quality; Patronage

1. INTRODUCTION

The Aviation sector is one of the sectors that have helped in developing the economy of a nation because it has helped in moving people, product from one place to another, either being domestic or international, especially when the distances involved are long.

Currently, anyone can easily access the aviation service from their respective air terminals. In a highly competitive environment, the provision of high quality services to passengers is the core competitive advantage for an airport profitability and sustained growth (Kalaiarasan, Appannan, & Bera, 2015).

More so, with the fact that air transport passenger services are basically the sales of passenger seat kilometres (PSK) or passenger seat miles (PSM), it becomes highly imperative that services be differentiated not just by fare but also by other incentives that includes service quality (Stephens, 2009). Air transport has become one of the main drivers of global economic activity by virtue of the fact that it connects people and business across the globe, and inevitably acts as catalyst for job creation in the air transport value chain (Otieno, 2016).

An airport is an area on land (including any buildings, installation and equipment) intended to use for the arrival, departure and surface movement of aircraft. Airport also serves as a key role in transportation of people and goods (Adeniran, Adekunle, & Oyedele, 2017). The smooth functionality of the airport or seaport is a function of the land-based transport system that feeds it with and evacuates traffic from it (Stephens & Ukpere, 2011). The profitability of an airport is therefore crucially dependent on volume of traffic it is able to process. As traffic volume increases, so does revenue, while costs increase more slowly because of the high fixed cost element of airport (Stephens, 2009). Therefore, airports performance, like most transport terminals are, tied to volume of throughput processed. This is why airports and other terminals in transport must continually improve their processing ability on traffic passing through them.

Airport service quality is one of the main factors passengers and airlines look into before the choice of airport. There are two main users of the airport, these are passengers and airlines. Airport patronage can be seen as an act of passengers or an airline to consistently choose an airport instead of going to another airport. Passengers choose an airport based on what he or she obtained at the airport likewise the airlines. To fulfil the customers' need, the main concern for any airport is the quality and integrity of services offered to their patrons. To this end, this study is set to examine the Airport service quality and patronage in Nigeria. The specific objectives are to: examine the factors influencing airports services quality in Nigeria airports and determine the factors influencing choice of airports patronage by airlines and passengers.

2. MATERIALS AND METHODS

The study adopts inferential and survey methods to analyse the data that was obtained on airport service quality and patronage in Nigeria using MMIA and NAIA as the study area. This research employed the use of primary data through the use of structured questionnaire administered to FAAN management, passengers and airlines separately. Area of Study includes: Murtala Mohammed International Airport (MMIA) and NnamdiAzikiwe International Airport (NAIA) was used as the study area. To analyse the data generated, multiple regression was used to analysed the factors influencing airport service quality and factors influencing choice of airport patronage by airlines and passengers.

3. RESULTS AND DISCUSSION

3.1. Factors influencing airport service quality in Nigeria airports

The summary of the correlation (r) between services rendered and all other factors that limit services rendered in Abuja and Lagos airport as gather from the FAAN staffs through the use of well-structured questionnaires is depicted in Table 1. The r is 0.734 and 0.736 for both Abuja and Lagos Airport respectively, which shows a strong relationship between the dependent variable (Landing services, terminal area navigation services, cargo handling services, security services, aircraft parking services and hanger, baggage handling, ground transportation services, trolley services, inspection services, fire services, maintenance services, aircraft de-icing services, display services, parking services, duty-free retail services, advertising services and currency exchange services) and all the other independent variables (Poor implementation of rules and regulations, funds, poor monitoring, pressure of demand, staff education, information, corruption and frequent change of policy).

The coefficient of determinant (R^2) for Abuja and Lagos are 0.539 and 0.541 respectively, this implies that Poor implementation of rules and regulations, Funds, Poor monitoring, Pressure of demand, Staff education, Information, Corruption, Frequent change of policy made up of 53.9% for Abuja airport and 54.1% for that of Lagos Airport, all these factors limit the services rendered to both airlines and passengers in both airport while the remaining 46.1% and 45.9% accounted for other factors that is not considered in this model (error term).

ANOVA value of the regression is also shown in Table 1. The *p value* is 0.010 for Abuja airport at 0.05 significant levels and *p value* is 0.030 at 0.05 significant levels for Lagos airport. This implies that the independent variables (Poor implementation of rules and regulations, Funds, Poor monitoring, Pressure of demand, Staff education, Information, Corruption, Frequent change of policy) are the factors influencing the rendering of those services (Landing services, terminal area navigation services, cargo handling

services, security services, aircraft parking services and hanger, baggage handling, ground transportation services, trolley services, inspection services, fire services, maintenance services, aircraft de-icing services, display services, parking services, duty-free retail services, advertising services and currency exchange services).

Table 1: Regression Summary for Factors Limiting Services Rendered By FAAN

Results	Abuja FAAN Staff	Lagos FAAN Staff
R	0.734	0.736
R^2	0.539	0.541
Adj R^2	0.291	0.293
Std. Error of the Estimated	0.68759	0.68754
F	3.132	3.142
Sig.	0.010	0.030

Predictors: (Constant), Poor implementation of rules and regulations, Funds, Poor monitoring, Pressure of demand, Staff education, Information, Corruption, Frequent change of policy

The coefficient of each independent variables and their significant level of each airport is shown in Table 2. It can be noted that five variables out of eight independent variables that were considered for this model were significant for Abuja, while four variables of eight were significant for that of Lagos airport. Poor implementation of rules and regulations; Poor funding; Poor monitoring; Pressure of demand; Staff education; Information; Corruption; Frequent change of policy, are limiting the rendering of those services and are statistically significant at *p values* of 0.000 and 0.000 respectively ($p<0.05$ significant level). Poor implementation of rules and regulations has a t-value of 1.814 and *p value* of 0.049 at 0.05 significant level ($p<0.05$), Funds has a t-value of 1.141 and *p value* of 0.263 at 0.05 significant level ($p<0.05$), Poor monitoring has a t-value of 0.676 and a *p value* of 0.004 at 0.05 significant level ($p<0.05$), Corruption has a t-value of 1.389 and a p-value of 0.174 at 0.05 significant level ($p<0.05$) while Frequent change of policy status has a t-value of 0.814 and a *p value* of 0.022 at 0.05 significant level ($p<0.05$).

The coefficient of determination (R^2 = 0.539) for Abuja and (R^2 = 0.541) implied that 53.9% and 45.1% percent of variation in the independent variable occurred while the correlation coefficient (R = 0.734 and 0.736) is the strength of description between the independent variables and dependent variable. It was inferred that a strong association existed between the dependent variable and four independent variables in Lagos accounted for what is responsible for factors influencing services rendered by airports. From the findings, it shows that five independent variables of the factors considered in Abuja and four of the factors in Lagos airport affect the manner to which they offer services to airlines and passengers.

The model is given below:
Services Rendered = P
Poor implementation of rules and regulations = X_1
Funds = X_2
Poor monitoring = X_3
Pressure of demand = X_4
Staff education = X_5
Information = X_6
Corruption = X_7
Frequent change of policy = X_8

Abuja Airport Model
$P = 1.411 + 0.310X1 - 0.303X2 - .072X3 - 0.479X4 + 0.221X5 + 0.099X6 + 0.329X7 - 0.060X8 + e$

Lagos Airport Model
$P = 1.211 + 0.321X - 0.310X2 - 0.423X3 - 0.481X4 + 0.234X5 + 0.091X6 + 0.357X7 - 0.162X8 + e$

Table 2: Regression Coefficients

	Abuja Airport			Lagos Airport		
Independent variable	B	T	Sig.	B	T	Sig.
(Constant)	1.411			1.211		
Funds	.310	1.141	.263	.321	1.141	.263
Frequent change of policy	-.303	.814	.022	-.310	.811	.023
Information	-.072	-.779	.042	-.423	-.771	.400
Pressure of demand	-.479	-.361	.721	-.481	-.330	.701
Staff education	.221	-3.871	.001	.234	-3.432	.001
Corruption	.099	1.389	.174	.091	1.312	.171
Poor monitoring	.329	.676	.004	.357	.614	.003
Poor implementation of rules and regulations	-.060	1.814	.049	-.162	1.514	.039

Source: Survey Work, 2019

3.2. Determination of the factors that influence choice of airport by airlines and passenger

Airlines

The summary of the regression between choice of airport and all the factors that influence the patronage of all airlines in Abuja and Lagos airport as gathered from 60 airlines through the use of well-structured questionnaires is depicted in the Table 3. The correlation coefficient (R) is 0.926[a] and 0.842[a] for both Abuja and Lagos Airport respectively, which shows a strong relationship between the dependent variable and all the other independent variables. The R^2 = 0.857 and 0.709 respectively, this shows that Monopolistic opportunity, Aircraft parking and hanger fee, Landing fee, Demand for our services made up of 85.7% for Abuja airport and 70.9% for that of Lagos Airport of all the factors that determines the extent of patronage by the airlines in both airports while the remaining 14.3% and 29.1% accounted for other factors that is not considered in this model (they are known as error term).

It also shows the ANOVA value of the regression; from the table, the *p value* is 0.000 for Abuja airport at 0.05 significant level and *p value* 0.000 at 0.05 significant level for Lagos airport. This implies that the independent variables are significant. They are the one that actually affect the patronage level of airlines to a great extent. This means that Monopolistic opportunity, Aircraft parking and hanger fee, landing fee, Demand for our services are factors that determine the patronage level of airlines of airport services in the study area. It can then be concluded that a change in this services will actually affect or result into a change in the patronage level of the airlines of the airport services.

Table 3: Regression Summary for Factors that Influence Choice of Airport by both Airlines and Passenger

Results	Abuja Airlines	Lagos Airlines
R	0.926[a]	0.842[a]
R^2	0.857	0.709
Adj R^2	0.734	0.503
Std. Error of the Estimated	0.32456	0.32456
F	8.132	6.402
Sig.	0.000[a]	0.000[a]

Monopolistic opportunity, Aircraft parking and hanger fee, landing fee, Demand for our services

Source: Survey Work, 2019

Table 4 shows the coefficient of each independent variables and their significant level of each. It can be seen that two out of the four independent variables (Landing fee and Aircraft parking and hanger fee) considered for this model was significant for Abuja while two out of four was significant for that of Lagos airport (Landing fee and Aircraft parking and hanger fee). Aircraft parking and hanger fee, landing fee, are the factors that are statistically significant with significant level of 0.000 and 0.000 relatively at 0.05 significant level. Aircraft parking and hanger fee has a t-value of 0.055 and p-value of 0.040 at 0.05 significant level ($p<0.05$), landing

fee has a t-value of -0.070 and p-value of 0.032 at 0.05 significant level ($p<0.05$), while the remaining two variables are not statistically significant. Demand for our services has a t-value of 0.089 and a p-value of 0.062 at 0.05 significant level ($p<0.05$), Monopolistic opportunity has a t-value of 0.494 and a p-value of 0. 416 at 0.05 significant level ($p<0.05$)

The coefficient of determination (R^2 = 0.857) for Abuja and (R^2 = 0.709) implied that 85.7% and 70.9% percent of variation in the independent variable occurred while the multiple correlation coefficient (R = 0.926[a] and 0.842[a]) shows the strength of association between the independent variables and dependent variable. It was inferred that a strong association existed between the dependent variable and two independent variable in Lagos which accounted for what is responsible for airline patronages. From the findings, it shows that two independent variables in Abuja and two in Lagos airport of the factors considered affect the manner to which they patronized the selected airports.

The model is given below:
Airline Patronage = P
Landing fee = X_1
Aircraft parking and hanger fee = X_2
Demand for our services = X_3
Monopolistic opportunity = X_4
Abuja Airlines Model $P = -2.667 - 0.267X + 0.533X2 + 0.733X3 + 0.333X4 + e$
Lagos Airlines Model $P = 2.007 + 0.281X + 0.547X2 + 0.383X3 + 0.324X4 + e$

Table 4: Regression Coefficients

Abuja Airlines				Lagos Airlines		
Independent variable	B	T	Sig.	B	T	Sig.
(Constant)	-2.667	0.533.	0.034	2.007	0.335.	0.031
Landing fee	-0.267	-0.070.	0.032.	0.281	.811	0.012.
Aircraft parking and hanger fee	0.533	0.055.	0.040.	0.547	.771	0.030.
Demand for our services	0.733	0.089.	0.062.	0.383	.330	0.081.
Monopolistic opportunity	0.333	0.494.	0.416.	0.324	-1.432	0.312.

Source: Survey Work, 2019

Passengers

Table 5 shows the summary of the regression (r) between choice of airport and all the factors that influence the patronage of both passengers in Abuja and Lagos airport as gather from passengers through the use of a well-structured questionnaires. The R is 0.344[a] and 0.344[a] for both Abuja and Lagos Airport respectively, which shows a weak relationship between the dependent variable and all the other independent variables. The R value of Lagos passengers is the same as that of Abuja because the passengers have the same opinion irrespective of the airport where they embark from. The R^2 = 0.118 and 0.118 respectively, this shows that all the services considered made up of just 11.8% for Abuja airport and 11.8% for that of Lagos Airport of all the factors that determines the extent of patronage of passengers in both airports while the remaining 89.2% and 89.2% accounted for other factors that is not considered in this model (they are known as error term).

This means that the larger percentage of those things that made passengers to always come back to any of the two airports are not captured in the model. It also shows the ANOVA value of the regression, from the table the significant level is 0.670[a] for Abuja airport at 0.05 significant level and 0.670[a] at 0.05 significant level for Lagos airport. This shows that the independent variables are insignificant together as a whole to bring about a reasonable change in dependent variable. The variables that are considered in this model has little impact on the patronage level of passengers in the real life situation as the error term (88.2%) is greater than the value of R^2 (11.8%).

Table 5: Regression Summary of Factors that Influence Choice of Airport by Airlines and Passengers

Results	Abuja Passengers	Lagos Passengers
R	0.344[a]	0.344[a]

R^2	0.118	0.118
Adj R^2	-0.030	-0.030
Std. Error of the Estimated	0.49937	0.49937
F	0.797	0.797
Sig.	0.670[a]	0.670[a]

Source: Survey Work, 2019.

Table 6 shows the coefficient of each independent variables and their significant level of each. It can be seen that none of the seven independent variables considered for this model was significant for Abuja while for that of Lagos airport. Previous experience at the airport, Comfort of the terminal, Flight frequency, availability of baggage trolleys, Ambience, Safety, Speed of baggage claim are the variable considered for this work. They were found to be insignificant in determining the patronage level of passengers of any airport in the country.

The coefficient of determination (R^2 = 0.118) for Abuja and (R^2 = 0.118) implied that 11.8% and 11.8% percent of variation in the independent variable occurred while the multiple correlation coefficient (R = 0.344[a] and 0.344[a]) shows the strength of association between the independent variables and dependent variable. It was inferred that a weak association existed between the dependent variable and two independent variable in Lagos accounted for what is responsible for passengers' patronages. From the findings, it shows that none of independent variables in Abuja and in Lagos airport are the factors that affect the manner to which passengers patronized the selected airports. The reason for this might be due to the fact that there is no competition among the international airports in Nigeria and Lagos and Abuja are the busiest and most used airport among all the international airport in Nigeria and the passengers has no choice to be choosing.

The model is given below:
Airline Patronage = P
Previous experience at the airport = X_1
Comfort of the terminal = X_2
Flight frequency = X_3
Availability of baggage trolleys = X_4
Ambience = X_5
Safety = X_6
Speed of baggage claim = X_7

Abuja Airport Model
$$P = 0.10 + 0.057X1 + 0.290X2 + 0.018X3 + 0.309X4 - 0.155X5 - 0.079X6 - 0.042X7 + e$$

Lagos Airport Model
$$P = 0.10 + 0.057X1 + 0.290X2 + 0.018X3 + 0.309X4 - 0.155X5 - 0.079X6 - 0.042X7 + e$$

Table 6: Regression Coefficients

Abuja Passengers				Lagos Passengers		
Independent variable	B	T	Sig.	B	T	Sig.
(Constant)	.10	.073	.942	.10	.073	.942
Previous experience at the airport	.057	.635	.527	.057	.635	.527
Comfort of the terminal	.290	.715	.476	.290	.715	.476
Flight frequency	.018	.176	.861	.018	.176	.861
Availabilty of baggage trolleys	.309	1.190	.237	.309	1.190	.237
Ambience	-.155	-.650	.517	-.155	-.650	.517
Safety	-.079	-.962	.339	-.079	-.962	.339
Speed of baggage claim	-.042	-.651	.517	-.042	-.651	.517

Source: Survey Work, 2019.

4. CONCLUSION

The study successfully assessed services rendered in both Murtala Mohammed International Airport (MMIA) and Nnanmdi Azikwe International Airport (NAIA), factors influencing airport service quality in the selected airports and factors that influence the choice of airports by airlines and passengers. It can be conclude from the study of both Lagos and Abuja airports that all the services were rendered except aircraft de-icing. It is efficient that poor implementation of rules and regulations, poor monitoring, staff education, frequent change of policy, information, staff education, information, corruption are the one limiting the services in both Abuja and Lagos Airport. It can be seen that all these airports are not competitive in their services rendered and the use of the airport by the airlines and passengers are due to proximity of the passengers to the airport and not based on the benefit they derived from the services rendered to them. To this end the airports need to develop policy to ensure that all the factors mitigating the smooth provision of these services are addressed on time so as to keep customers (Airline especially).

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Conflict of Interest

The authors declare no conflicts of interests any matter related to this paper.

Data and materials availability

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