



An assessment of the presentation of private vehicle organizations in chosen Southwestern states of Nigeria

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Abstract

This paper evaluates the performance of Private Transport Companies in Southwestern, Nigeria. It also ascertains the influence of the identified variables on the performance of the companies. A Sample size of 270 respondents was purposively selected among registered private transport companies in the Study area. Correlation and regression analyses techniques were adopted in analyzing the collected data. The results of the findings showed a significant correlation between the performance of private transport companies and each of the independent variables of age of establishment ($r = 0.593$), staff strength ($r = 0.647$), wages/salary trends ($r = 0.54$) and total number of functioning vehicles ($r = 0.539$) and these variables had a strong, positive and significant relationships and are answerable for the performance that is measured in terms of return on investment of the private transport companies in the study area. The result of regression analysis showed that, the coefficients of the total number of employees (X_2), the government regulations on inputs such as petroleum products and auto-spares parts (X_3), costs of maintenance/operation (X_6), state of the roads (X_7), useful life age of the vehicles (X_9) and effects of telecommunication (X_{11}) contributed significantly to the variation in the level of performance of private transport companies at both 5 and 10% levels.

Keywords: Private transport, passenger, performance, evaluation, vehicles.

INTRODUCTION

Public transport operation in Nigeria is at the moment the joint responsibility of two broad groups, namely: the private sector and the public sector operators. The private sector operators are by far the largest providers of passenger services. They currently provide more than 90% of all urban passengers transport services (Armstrong, 1998). Within this group are the relatively few large-scale operators of bus fleet, who usually provide long-distance, inter-urban bus services and this sect have duly incorporated their business firm while, thousands of individual operators of small vehicle units such as minibuses, taxis, motor-cycles and adapted vehicles such as 'Molue' – which also provide both inter and intra urban passenger transport services are unincorporated but belong to one association or the others. More often than not, private registered companies are relatively better organized than the individual, small-scale operators.

Many of the registered private transport companies/operators have their own maintenance workshops and garages. They train their staff and their operations are

known to be viable. However, the economic recession and the spiraling costs of vehicle operation is seriously eroding their profit margins (Aderamo, 2004).

The majority of private sector transport operators in Nigeria provide transport services, which are primarily demand responsive and unscheduled in the urban centre. Most of these services are also operated on the basis of shared-ride, except for hired taxicabs. Moreover, road transport, the predominant mode used for providing services sometimes varies from one urban area to another, although the operating characteristics of the mode are similar. In Jos, for instance, there were 9,552 registered taxis for town service in 1999 as against 917 minibuses by the end of December 1995. In Bauchi town, there was virtually no minibus service, so majority of public transport passengers depended on taxis and motorcycles (Sumaila, 2004).

As already noted, only a few private transport operators own very large fleets of vehicles, which are used for pro-

viding intra-urban services. In Lagos, some large-scale operators provided intra-urban bus services before the mid 1970s. These include first generation transport operators such as J & N Zarpas, Anice Transport, Benson Transport Services, Oshinowo, Charity and second-generation transport operators such as Ohionuan Transport Services, ABC Transport Services, Ola Express and Ifechinachi Transport Nigeria Limited (Levett and Ogunwole, 2003).

In spite of the efforts of the private sector operators at providing passenger transport services in order to meet the ever increasing demand for them, the effects of the current economic recession and the Structural Adjustment Programme on their operation started to manifest in the latter part of the 1980s. In the road passenger transport sector, the available buses and taxis gradually reduced in size, while many of the available public transport vehicles showed apparent signs of ill-maintenance and steady deterioration in body condition. Indeed the quality of services deteriorated further, and this situation remained unchanged (Azagba, 2004).

The available vehicle fleet in Nigeria including public transport vehicles fell from 614, 556 in 1984 to 218, 728 in 1992 (FOS, 2000). Over the same period of time, new commercial motor vehicle registration fell from about 120,000 to 30,000; a fall of about 33% (Komayer, 1993). In addition the information obtained from Bauchi State Motor Licensing Authority and Central Motor Registry in Ilorin also showed the declining trend in vehicle Registration between 1998 - 2003 and 1995 - 2001.

The same trend was observed in Lagos State, where the number of newly registered commercial buses declined from 72,264 in 1982 to just 10,079 in 1988 (World Bank, 1991). The total number of available buses for both public and private use in the Lagos metropolis fell from about 39,288 in 1983 to about 9,576 in 1989. This declining trend in the supply of all types of motor vehicles, and public transport vehicles in particular, affected private sector passenger transport operations quite considerably (Bolade, 1990).

The Structural Adjustment Programme (SAP) apparently led to sharp rises in the prices of vehicles and spare parts. For instance, between the time when SAP was introduced and now, the prices of Peugeot 504 station wagon and its spare parts had risen from between 105% to more than 6,000% (Ismaila, 2004).

In Nigeria, the dwindling economic fortunes affected virtually every sector of the economy, including the urban public transport sector. Many private sector operators are finding it increasingly difficult to maintain and adequately manage their fleets of mini-buses and taxis and the scope for fleet expansion is seriously constrained by the exorbitant prices of vehicles, spare parts and high vehicle operating expenses.

What someone can readily observe today is the manner in which public transport operation has suffered severely, and the consequential effects of untold hardship

that passengers and even transport operators themselves are experiencing.

The operations of the private sector transport providers are still terribly hampered by the exorbitant prices of vehicles and spare parts among others. Even, fairly used, second hand vehicles, popularly known as 'Belgium' or Tokunbo' are no longer within their reach, when compared with the situation about three to five years ago, when the prices of fairly-used, 'Tokunbo' vehicles were just about half of what they are today. Consequently, the private transport operators are hardly able to replace the existing aged vehicles.

METHODOLOGY

This research work was carried out in the administrative seats of selected States of Southwestern Nigeria that is, Akure and Osogbo with the aid of structured questionnaires and interview techniques.

The states are known to have existed over the centuries as economics and administrative centres of the former kingdoms in this part of the country. The activities of the colonial administration between the mid 20th century reinforce their growth and development. Also of importance is the introduction of relatively advanced transport systems, notably the railways and motorable roads both of which have enhanced their growth since the late 19th century. The states are connected by major and express roads and their locations in the country make them accessible to the more economically developed regions in the country.

A total number of six (6) out of eight (8) registered private transport companies where 270 respondents out of 360 (that is 75% response rate) were selected from the list only registered transport companies in the States using purposive sampling technique. The collected data were analyzed using correlation analysis and multiple regression techniques.

The identified factors include: age of establishment of the companies, total number of employees (staff strength), government regulations on importation of vehicles and spare parts, total number functioning vehicles, cost of maintenance, State of the roads, influence of exchange rate and organization structure.

The model is specified as:

$$Y = a_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + \dots + b_n X_n + U_i \dots \dots \dots \text{Equ. (i) Where}$$

a_0 = Constant

$X_1 \dots X_n$ = Explanatory variables

B_i = Parameters to be estimated ($i = 1, 2, 3, \dots, n$)

U_i = Error term or disturbance term

Y = Dependent variable (performance measured as return on investment, ROI)

X_1 = Year/age of establishment of the companies selected (YEST)

X_2 = Total number of employees (staff strength) (TONE)

X_3 = Govt. regulation on vehicles and spare parts importation (GOVEVI)

X_4 = wages/salary trends (WAST)

X_5 = total number of functioning vehicles (TONUF)

X_6 = cost of operation (COPE)

X_7 = state of the roads (STORS);

X_8 = influence of exchange rate (IFEXRA)

X_9 = age of the vehicles (ATEV);

X_{10} = effect of paratransit and non-motorized (EPANOM)

X_{11} = effect of information and communication technology (ICT)

X_{12} = motivational approaches (MOTIAP);

X_{13} = organizational structure (ORGANSTRUC)

X_{14} = fare charged (FACH).

Table 1. Correlation matrix of factors influencing the performance (Q₀) of private transport companies

Variables	Q ₀	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄
Q ₀	1.000														
X ₁	0.593**	1.000													
X ₂	0.647**	0.701**	1.000												
X ₃	0.216	0.673**	0.463**	1.000											
X ₄	0.539*	0.478*	0.568**	0.068	1.000										
X ₅	0.539*	-0.046	0.468	0.593*	0.056	1.000									
X ₆	0.586*	-0.567	0.576*	0.409*	-0.087	-0.063	1.000								
X ₇	-0.064	-0.018	0.058	0.017	0.312	0.313	-0.063	1.000							
X ₈	-0.167	-0.519*	0.062	-0.063	0.047	0.043	0.286	0.094	1.000						
X ₉	0.528**	0.417*	0.368	-0.068	0.0268	-0.050	-0.148	0.168	0.967	1.000					
X ₁₀	0.637	-0.218*	0.546	-0.078	0.436	0.678	0.563	0.136	0.582	0.729	1.000				
X ₁₁	-0.728	-0.563	0.583	0.763	0.689	0.728	0.756	0.236	0.347	0.628	0.723	1.000			
X ₁₂	0.324	0.436	0.132	-0.731	0.338	0.453	-0.453*	0.532	0.536	0.632	-0.421*	0.432	1.000		
X ₁₃	0.385	-0.441	0.231	1.363	0.521	0.536	0.356	0.251	0.546	0.326	0.521	0.347	0.636	1.000	
X ₁₄	0.581	0.491	0.326	0.453	0.621	0.438	0.287	0.357	0.438	0.626	0.543	0.431	0.637	0.321	1.000

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

level **Source:** Data Analysis, 2005

Table 2. Result of regression analysis of private transport companies' performance evaluation.

Regression Coefficients																		
Forms of Equation	Constant	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄	d*	R ²	F-value
Linear Function	-21.453	0.736	2.296	-2.469	1.345	0.769	-1.867	-1.363	0.118	1.162	-0.636	-3.276	0.836	0.168	0.719	1.886	0.851	*** 4.519
		(1.80)	(2.63)**	(2.46)**	(1.22)	(1.01)	(2.12)**	(1.85)*	(1.07)	(1.75)*	(1.35)	(1.83)*	(1.26)	(1.02)	(0.94)			
Semi-Log Function	18.741	0.186	0.418	0.561	-	-	-	-	-	-	-	0.550	0.228	0.035	0.159			
		(0.22)	(2.73)**	(1.69)								(0.66)	(1.34)	(0.40)	(0.26)	1.726	0.683	2.901
Double Log Functn.	-5.442	0.117	0.326	0.116	0.044	0.171	-	-	-	-	-	-	0.636	0.682	0.717			
		(0.20)	(0.19)	(0.74)	(0.06)	(1.49)							(1.35)	(1.89)	(0.92)	1.627	0.582	3.762

Exponential Function.	-5.569	0.117	1.072	1.424	1.978	0.471	0.683	0.163	0.261	0.473	0.178	0.369	0.768	0.862	0.563	1..963		
		(0.17)	(1.73)**	(1.62)*	(2.15)	(2.07)*	(2.41)**	(1.76)	(0.27)	(1.66)*	(1.28)	(2.05)	(0.81)	(1.19)	(0.78)		0.801	3.901**

Source: Data Analysis, 2005.

KEY:

Figures in parenthesis are t-values

* Significant at 10%

** Significant at 5%

*** Significant at 1%

X1 = age of the establishment (years of incorporation);

X2 = staff strength (total number of employees)

X3 = government regulations on inputs (dummy: Yes=1, Otherwise=0);

X4 = wages/salary trends (Naira)

X5 = total number of functioning vehicles;

X6 = cost of operation (Naira)

X7 = state of the roads (dummy: Good = 1, Otherwise = 0);

X8 = influence of exchange rate (dummy: Yes=1, Otherwise=0)

X9 = age of the vehicles (years);

X10 = effect of paratransit and non-motorized (Yes=1, Otherwise=0)

X11 = effect of information and communication technology ICT (dummy: Yes=1, Otherwise=0)

X12 = motivational approaches (dummy: Yes=1, Otherwise=0);

X13 = organizational structure (dummy: Yes=1, Otherwise=0)

X14 = fare charged (Naira).

RESULTS AND DISCUSSION

The statistical analysis and the significance of the influence of some variables on the performance of private transport companies is as shown in Tables 1 and 2.

The matrix (Table 1) shows the relationship between the dependant variable (the profitability), (Q₀) and each independent variable as well as the correlation among the independent variables. The correlation between the dependent variable (Q₀) and each of the independent variables showed that there is significant (P ≤ 0.05) positive correlation between the performance (Q₀) and the companies' age of the company (X₁), total number of employees (X₂), wages trends (X₄), total number of functioning vehicles (X₅), cost of maintenance (X₆) and useful life age of the vehicle (X₉). This implies that as these variables X₁, X₂, X₄, X₅, X₆ and X₉ increase; the performance of the companies increases.

While X₄ (wages/salary trends), X₅ (total number of functioning vehicles) and X₆(maintenance cost) were observed to have weak positive relationships with the performance of private transport companies, X₉ (useful life age of the vehicles) exhibit-ed a fairly strong relationship. However, state of the roads (X₇) and effect of ICT (X₁₁) were inversely related to the performance of the companies. This implies that as state of roads and telecommunication reduced the performance of the transport companies. The age of the company (X₁) has a very strong, positive and significant relationship (r = 0.701, P ≤ 0.05) with the total number of employees (X₂) of the companies. Similarly the age of the company had a fairly strong positive and significant relationship with government regulations on transport inputs (X₃), wages/ salary trend (X₄) and useful life age of vehicles (X₉). The numbers of employees of the companies (X₂) and government regulations on transport

inputs (such as petroleum products) had strong, positive and significant relationship with the wages trend (X₄) and cost of maintenance (X₆). Government regulations on transport operations (X₃) had weak, positive and significant relationship with the total number of functioning vehicles(X₅) and cost of maintenance. The positive relationship among other variables is weak and insignificant (Table 1). Negative and significant relationship exists between the age of the companies (X₁), exchange rate (X₈) and effect of paratransit and non-motorized modes (X₁₀). Other independent variables had weak, negative and insignificant relationship.

Regression results of private transport companies

The result of the regression analysis for each of the four functional forms is as shown in Table 2. The functional forms that were considered before

choosing the lead equation were linear, semi-log, double-log and exponential functions. The essence of the multiple regression was to determine how the explanatory variables affect the dependent variable (performance). From the four functional forms fitted to the data, the linear function was chosen as the lead equation. This was based on the appropriateness of the signs on the regression coefficient as specified by *a priori* expectation, the value of the coefficient of multiple determinations R^2 , the number of statistically significant variables that is 't' and F-values and tests.

The exponential regression result obtained is as follows:

$$Q_0 = -21.453 + 0.736X_1 + 2.296X_2 - 2.469X_3 + 1.345X_4 + 0.769X_5 - 1.867X_6 - 1.363X_7$$

$$(1.80) (2.63)** (2.46)** (1.22) (1.01)(2.12)** (1.85)*$$

$$+ 0.118X_8 + 0.162X_9 - 0.636X_{10} - 3.276X_{11} + 0.836X_{12} + 0.168X_{13} + 0.719X_{14}$$

$$(1.07) (1.75)* (1.35) (1.83)* (1.26) (1.02) (0.94) \dots (\text{Eqn.3})$$

t -ratio values are in parenthesis

** Significant at 5% level

* Significant at 10% level

The coefficient of multiple determination (R^2) of 0.851 implies that 85.1% of the total variation in the performance of the private transport companies was explained by the explanatory variables. The remaining 14.9% not explained could be attributed to the stochastic variation.

The t-value of the coefficients X_2 , X_3 , X_6 , X_7 , X_9 and X_{11} were all statistically significant at both 5% and 10% levels. This implies that the total number of employees (X_2), the government regulations on inputs such as petroleum products and auto-spare parts (X_3), costs of maintenance/operation (X_6), state of the roads (X_7), useful life age of the vehicles (X_9) and effects of telecommunication (X_{11}) contributed significantly to the variation in the level of performance of private transport companies (Table 2).

The positive regression coefficients of X_2 and X_9 indicate that increasing useful life age of vehicle and number of employees will have an increasing effect on the performance of private transport companies. While, the negative regression coefficients of X_3 , X_6 , X_7 and X_{11} indicate that every measure of increase in government regulations on inputs such as prices of petroleum products, importation of auto-spare parts, increasing cost of maintenance, increasing poor state of roads and improved telecommunications will have a decreasing effects on the performance of the companies in the study area. The total number of employees (X_2) had a coefficient of 2.296 ($\beta_2 = 2.29$), which implies that any one-unit increase in the number of staff would increase the profit margin by ₦2.296. The significance of the coefficient at 5% level implies that the total number of employees contributed positively and significantly to the performance

of the companies. Therefore, the staff strength of the companies was of vital importance to the performance of private transport companies in the study area. This is in consonance with the earlier findings of Singal (2000) in India where it was ascertained that staff strength has significant effects on the profit maximization of Delhi Transport Corporation.

The Government regulations on inputs such as pump price of petrol, importation of vehicles and auto-spare parts had a coefficient of -2.469 ($\beta_3 = -2.469$) which means for every government regulations in the study area, there was a decrease of ₦2.469 in the performance of private transport operators. This value ($\beta_3 = -2.469$) is significant at 5% level which implies that various government regulations relating to transportation inputs such as pump price of petroleum products and restriction on the importation of vehicles and/or auto-spare parts contributed negatively and significantly to the profitability of the private transport companies in southwestern Nigeria. This result is contrary to the findings of Agarwal (2002) that various government policies on urban transport management helped privately owned bus transport undertakings in India to procure improved transport inputs such as auto-spare parts at affordable costs which eventually enhanced their profitable operations.

Furthermore, the cost of maintenance (X_6) is an important variable and it is expected to contribute positively and significantly to the performance of transport sectors. However, this variable has a coefficient of -1.867, which means that for every measure of increase in cost of maintenance, there is a decrease of ₦1.867 in the performance. This value ($\beta_6 = -1.867$) is significant at 5% level meaning that cost of maintenance contributed negatively and significantly to the performance of private transport companies in the study area.

State of the roads (X_7), has a coefficient of -1.363 ($\beta_7 = -1.363$) which is significant at 10%. Thus, the transporter' performance decreased by ₦1.363 with one unit of effort on the road. The explanation for this result is that the state of the roads had adverse effect on the performance of transport operations. The junior spectrum of staff in the companies that were interviewed confirmed the poor state of the roads in the area. Further complaints of the motorists include increase in the death rate as a result of frequent accidents caused by the poor state of roads and inadequate security especially, during night trip. This corroborates the findings of Aworemi and Ogunsiji (2004) that poor state of road had significant effects on the output of small scale farmers in Ogbomoso area of Oyo State, Nigeria. Its effects therefore cannot be over emphasized on public and private transport companies' performance in the study area. The useful life/age of the vehicles (X_9) has coefficient of 1.162 ($\beta_9 = 1.162$) this result showed that if the useful life age of the vehicle is increased by a unit, the performance of the transport companies is increased by ₦1.162. This value, significant at 10% level implies that, useful life /age of the vehicles

possessed by the transport companies contributed positively and significantly to the performance of the transport businesses.

Finally, information and communication technology (ICT) had a coefficient of - 3.276 ($\beta_{11} = -3.276$). This means for every measure of increase in effective ICT modes such as usage of Globalize System of Mobile Phones (GSM), there is a decrease of ₦ 3.276 in the performance of transport operators. This implies that the travel demand tends to decline as a result of effective media of communication. Consequently, the patronage of transport company's reduced considerably because; a lot of issues were resolved on-line in lieu of traveling over long distance. This variable is significant at 10% level. However, this result is in contrast with the findings of Fadare and Salami (2004) that, the usage of GSM enhance travel behaviour of residents in Osogbo area of Osun state, Nigeria.

Meanwhile, age of the company (X_1) had a coefficient of ($\beta_1 = 0.736$) which shows that if the age of incorporation of the private transport companies increased by one year, the performance would increase by ₦0.736. This indicates that the older the company, the better the performance of the company. However, this value ($\beta = 0.736$) is insignificant at both 95% confidence interval.

The wages trend of private transport companies (X_4) has a coefficient of ($\beta_4 = 1.345$). This result showed that if the wages trend of private transport sectors is increased by a unit, the performance is increased by ₦ 1.345. However, this value is insignificant at both 5 and 10% probability levels.

The total number of functioning vehicles (X_5) had coefficient of ($\beta_5 = 0.769$), which indicates that if the total number of functioning vehicles possessed is increased by a unit; the performance will increase by ₦0.769. The value is however insignificant at both 5% and 10% probability levels. This implies that the quantum functioning vehicles is vital to the financial performance and quality of services of transport sectors. However, insignificance could be an indication of the complex of some vehicles which might not be road-worthy as at the time of this study. The transport operators interviewed also confirmed that the state of the available vehicles for transport services was very poor.

The influence of exchange rate (X_8) had coefficient of ($\beta_9 = 0.118$), which shows that if the exchange rate increases by a unit, the performance of the private transport operators will also increase by ₦0.118. However, this variable is insignificant both 5% and 10% confidence levels, the insignificance of this variable to the performance is an indication of the abysmally poor contributions of exchange rate to the economy at large.

The paratransit and/or non-motorized (X_{10}) had a coefficient of (-0.636) which implies that for every increase in paratransit, there is a decrease of ₦0.636 in the performance of private transport companies. However, this variable is insignificant at both 5 and 10% level

Furthermore, according to transport operators, the advent of substitute such as motorcycle to the business whereby the commuters are taken to the doorstep has greatly reduced the patronage of public and private transport services notably in the urban centre. In addition, the paratransits were not affected by the traffic congestion thus; many passengers preferred the usage of motorcycle to public/private transport services.

The motivational approach (X_{12}) adopted by the management is an important variable and it is expected to contribute positively and significantly to the performance of transport businesses. In this study also, this variable has a coefficient of 0.336, which means that an increase in the motivation by the management of transport companies will lead to an increase of ₦0.336 in the performance of the companies. This means that employees, that is, subordinate were generally encouraged either through incentives or compensations for successful trip generations. However, this variable is not significant at both 5 and 10% levels.

The organizational structure (X_{13}) has coefficient of ($\beta_{13} = 0.164$), which showed that for every opportunity given to private transporters for effective management, the performance results increase by ₦0.164. This value is insignificant at both 5% and 10% levels. The fare pricing (X_{14}) has a coefficient ($\beta_{14} = 0.119$), which shows that if the government interference on fare pricing is increased by a unit, the performance would increase by ₦0.119. This indicates that the higher the fare the greater the profit margin of transport operators. This variable is insignificant at both 5 and 10% levels. The insignificance of this variable is as a result of little or no influence of government on fare pricing of private transport sector.

Conclusion and Recommendations

It has been argued that cities are the engines of economic growth in most developing countries, and that urban transport is the oil that prevents the engine from seizing up. Unfortunately, the deteriorating transport conditions are already damaging the economy of many large cities particularly the mega cities in southwestern Nigeria.

It is therefore obvious that for proper management of private transport companies there should be regular source of adequate funding.

An integrated approach to the development of the private transport must be considered. This will guarantee judicious use of resources. The following measures were suggested:

i). When imported, second hand vehicles, 'tokunbo' are no longer affordable; the right thing is to look inwards. Thus, the local vehicles assembly plants still need to do more in order to substantially increase the local content of vehicle components and accessories. This can help in reducing the costs of locally assembled vehicles and foreign exchange costs. More of such plants should be

established for various brands of vehicles.

ii). The availability of the competent calibre of staff is an important factor that can lead to the success of any establishment. Thus, all categories of staff need to be trained and retained.

iii). Rather than the piece-meal and 'fire-fighting' approaches which characterized, government response to the crisis facing the private/public transport companies, it is now time for the government, private and public sector operators of passenger services to start thinking about more concrete, short and medium range plans (strategic) and consistent policies that have far reaching effect on public transport operations and management.

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