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## **PLANNED MAINTENANCE POLICY FOR SUSTAINABLE DEVELOPMENT OF THE PUBLIC ROAD TRANSPORT SYSTEM**

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### **ABSTRACT**

The goal of planned vehicle maintenance is to retain or restore its output reliability. However, the scope of planned maintenance for road transport system goes beyond that limit. It covers management's scheduled activities, supervisors, technicians and mechanics, drivers and motor vehicles. These parameters, each bears a proof of good or poor management. In this study, emphasis was on motor vehicles. So data were collected from the records of Benue Links (Nig.) Ltd, on vehicles they acquired between year 2000 and 2009 and are working optimally and marginally. The data analyzed, using t-test for independent samples showed that the calculated t- value was greater than the critical t- value, at the same probability level. Therefore, the alternative hypothesis that stated, 'there are motor vehicles of five operating years and above functioning optimally in the public transport systems,' was rejected. This explained that management does not plan its maintenance programs to run the sector. It is suggested that a maintenance policy law be enacted to guide and direct management's activities for sustainable development of the sector.

### **INTRODUCTION**

The establishment of a public road transport system may be seen as attempt by government to provide a reliable transportation and employment needs of the citizens. This sector is placed in the hands of a management team appointed by government to enable sustainable operation, and so fares are charged to commuters for the services provided. Such proceeds are accumulated and can be ploughed back into the system to enable continuous development. For these objectives to be achieved, a policy guideline is necessary for the smooth operation of the sector. Priel (1974) stated that such policy guidelines are enshrined in the planned maintenance policy. The policy defines responsibility of management vis-a-vis: procurement, budget and financial control, training of technicians and drivers, the scope, type and limit of scheduled vehicle maintenance which could either be retaining or restoring reliability, type and level of service workshop required. However, from observation, as a commuter for over fifteen years what appears to be the case with the public transport system does not depict the standard practice. Fleets of motor vehicles have been injected into the system at various times through donations from federal and state governments and loans from banks at high interest rates to sustain the sector. Sooner than later such vehicles become scraps. And commuters' patronage dwindles as they turn to private sector for reliable services. At this stage, the management, with government backing, begins to seek for loans from commercial banks to provide new fleets of vehicles to woo commuters back. Operating the sector on loans from banks and / or waiting for donations is rather killing the system. Because when such donations fail to come in and government declines sponsorship,

the system will surely collapse. Although research studies have been made on the ways of improving the sector, no such study has been made on the need for a planned maintenance policy as a tool for sustainable development of the road transport systems. This paper attempts to fill this vacuum.

### **Statement of the Problem**

From observation, as a commuter, the reliability in terms of performance and appearance of motor vehicles in the public transport system is poor. Sometime journey started never ended because the vehicles park up in the mid journey. So the idea to investigate the reasons behind it was born.

### **Aim**

The aim of this paper is to examine the causes of poor maintenance of motor vehicles in the public transport system.

### **Limit**

The study is limited to motor vehicles in the public transport sector; it does not include the personnel in the sector.

### **Question**

Are there reliable motor vehicles of five operating years and above functioning optimally in the public transport system?

### **Hypothesis**

There are reliable motor vehicles of five operating years and above functioning optimally in the public transport system.

### **Review of Related Literature**

The management of the public transport service has a mandate to plan and run the sector in such a way that the desired objectives are achieved. In a bid to improve service delivery, the management of the public transport service in the state, announced that the Federal government has promised to provide forty new buses as part of palliative measures to cushion the effect of partial removal of fuel subsidy (Babajide, 2012). Also, that management has concluded arrangement, with state government's backing, to secure fifty buses on loan from African Development Bank to increase its fleet of vehicles for improved service delivery. The management has posted on its website; [www.benuelinks.gnbo.com.ng](http://www.benuelinks.gnbo.com.ng) a picture of their activities. That they are an organized government owned transport company that carry out transportation services ranging from inter and intra state. Their fleet of vehicles has over the years expanded to over 2000 buses, carrying out affordable service nationwide. They promote lease agreement with those who wish to invest in the company.

Nothing has been said by the management about the quality of technical or maintenance services they can provide for their vehicles and outsiders. A transport organization with over two thousand vehicles on its fleet should own and operate a standard vehicle

maintenance workshop. It is sad that such does not exist. It is an indication that management engages in ad-hoc practices with ill-trained workforce to run the sector in negligence of planned maintenance. According to Priel (1974) planned maintenance is a policy that is central in running a sustainable transport system. It spells out clearly, the duties of everybody involved. It gives management a direction of action and nothing is haphazardly done, information and action flow smoothly from top to bottom. This enables activities to be preformed effectively without breaks. While Baldor (2012) asserted that, when a well trained and motivated technician works on a vehicle, he helps the vehicle to maintain a very high second value for a long time.

### Materials and Methods

The data for this study were collected from the records of Benue Links limited, through visits to the company. The data comprised of the vehicles in their fleet acquired between the years 2000 and 2009, and are working optimally or marginally and recorded in table 1 below. The method used in analyzing data was t- distribution for independent samples.

**Table 1: Motor vehicles acquired between 2000 and 2009 and working optimally or marginally.**

Year of acquisition	Number brought	Number in optimal use	Number in marginal use
(n)	(N)	(Y <sub>1</sub> )	(y <sub>2</sub> )
2000	1	-	1
2001	12	-	12
2002	7	2	5
2003	7	3	4
2004	3	1	2
2007	2	2	-
	ΣN =32	Σy <sub>1</sub> = 8	Σy <sub>2</sub> = 24

### Data Analysis

The data were analyzed using the t-test for independent samples to test the alternative hypothesis and answer the research question. The following inferential statistical tools were employed;

Means of the groups  $\check{y}_i \& \check{y}_2 = \sum y_i / n_i$   
Where i= 1,2

Sum of squares (SS)

$$SS_1 = \sum y_1^2 - (\sum y_1^2)^2 / n_1$$

$$SS_2 = \sum y_2^2 - (\sum y_2^2)^2 / n_2$$

$$t = (\check{y}_1 + \check{y}_2) / \left[ \left( (SS_1/n_1 + SS_2/n_2) (1/n_1 + 1/n_2) \right)^{1/2} \right]$$

**Table 2 : Summary of Analysis**

Population	Df	t-cal	t-tab	Prob.	Decision
32	11	6.54	2.20	0.05	Rejected

The analysis was carried out at the probability level of 5% with the degrees of freedom of 11. The calculated t- value was 6.54 more than the t-table value of 2.20. Therefore, the alternative hypothesis that says, 'there are motor vehicles of five operating years and above functioning optimally in the fleet of vehicles in the public transport system,' was rejected.

### **Major Finding**

The motor vehicles in the public transport system do not last long. This is blamed on poor attitudes of management to planned maintenance.

### **Discussion**

A motor vehicle that is merely five years old and functioning marginally shows that it has been deprived of proper maintenance, that is retaining or restoring its reliability. It all boils down to management inability to effectively direct and control the system. Adim (2009) stated that the quality of service provided by a motor vehicle is a function of input from the driver and the maintenance personnel. Since these three variables; the driver, the technician and the motor vehicle are under the control and supervision of management, their failure or success is directly that of management. If the management fails then it has no foresight or lacks the initiative contained in the planned maintenance policy where duties, scope, and limitation are clearly spelt out for everyone involved. The management's success also depends on the level of training, motivation and dedication of the workforce and service facilities at their disposal. A standard workshop run by trained personnel to provide effective services even to outsiders can bring high economic benefits to the organization since services provided to outsiders must be charged and paid for.

### **SUMMARY**

The planned maintenance of the public transport system ensures sustainability since the accruing funds can be ploughed back into the organization, rather than operating the system on loans from banks. Such practice cannot sustain the system rather it will kill it. More especially now that there is growing economic recession and increasing competition from the private transport companies.

### **CONCLUSION**

The sustenance of public road transport system does not only lie on the purchase of more fleet of vehicles or donations, rather in the way and manner personnel, service facilities and the motor vehicles are taken care of by the management. Donations can be collected but not dependence on government backing to collect loans for purchase of new fleet of vehicles. The management should use her accumulated profit for growth, that will be sustainable development, even when government declines sponsorship, the system can still stand.

### **Recommendations**

It is recommended that a law should be enacted to compel management of public transport system to use approved maintenance policy to guide its operation. For further studies, it is suggested that the relationship between management and the maintenance workforce for sustainable development be investigated.

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