



Fare Structure and Operational Performance of Rivers Transport Company (RTC), Port Harcourt, Nigeria

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Abstract

This study examined fare structure and operational performance of Rivers Transport Company (RTC). Specifically it examine the cost and frequency of trips on each route, and the operational performance of RTC. The study used a cross-sectional research design. 398 copies of questionnaires were administered to users of RTC, and oral interview was conducted using simple random sampling technique. Descriptive tools such as percentage and frequency distribution, cost benefit analysis (CBA) were utilised for the data analysis. The analysis of the data revealed that the cost of transport per route is majorly determine by measurable indices to include; the vehicle type, the distance covered, destination, and nature of road infrastructure. The frequency of customer's patronage for RTC is solely dependent on the cost of travel and other attitudinal characteristics of drivers and the general operators of the Rivers Transport Company. Other findings revealed that there was a significant increase in the vehicular fleet, 0.58% and 0.59% of profit margin for 2017/2018 and 2019, respectively. The net profit obtained at 1000 vehicles in operation in 2017 and 2018 was ₦246,365,810 and ₦256,310,766, respectively. In 2019 at 1200 vehicles, a net profit of ₦284,047,200 was attained. The CBA indicates a viable performance since there is a positive relationship in growth between the total income and operational cost, and it is significant. The study recommend that adequate funding and provision of vehicles should be encouraged.

Keywords: Fare structure, Public-transport, RTC, Operational Performance

1. Introduction

Fare structure as a flexible instrument influences passengers' choice behaviour directly in taking sensitive decisions such as where to travel; when to travel, how to travel, what mode or means of transportation to use, and whether to travel. Ojekunle (2014) opine that fare is the amount of money payable to the transport operator or carrier to transport people, freight, and other logistics services. On some occasions, it may be partial if the government decides to subsidise part of the total cost of operation. According to Wojuade (2017), the



fare paid by the users is a unique segment of public transportation operation and it is the money paid directly or indirectly for the transport services rendered by the transport operators by the users. Fare determines the level of patronage of transportation services which may increase or reduce. The capability of transport operators to stay in operation is often determined by the margin of revenue generated from the transport fare and the operation cost of their business. Furthermore, the emphasis of private transport operators is to meet up their operation cost by charging a higher fare. However, the public transport operators provide a social service to the residents of that locality that must be affordable to the passengers. In other words, there is always a requisite for the proper regulation of fair pricing in the operation of public transportation in order to achieve the socio-economic objectives of public enterprises. This is to avoid the impact of the high charges on a large number of low-income people who depended solely on public transport as their primary transportation.

Worldwide, transport fare is crucial to the continued survival of operators of public transportation since the main revenue generation comes from it (Ajiboye, and Dosunmu, 2007; Jansson, Holmgren, and Ljungberg, 2015). However, the associations between public transport patronage and fare charged by the transport operators tend to be inverse, where lower fare charges seem to be associated with increased patronage and vice versa (Enoch, Kofi, and Kwaku, 2014; Jansson, et al, 2015). Therefore, it is essential to know that the impact of fare charges on transport is not equal at all times and in all modes of public transportation. The freedom to determine the fares to charge the users and easy accessibility to the market by the operators often result in the supply of bus services that will meet the basic need of the general public at competitive prices (World Bank, 2006). Similarly, transport operators can make a realistic return, which will encourage the provision of transport services and investment. Based on this, the demand for public transport will be met while competition among the operators considerably reduces the chances of extreme fares being charged and discourages inefficiency. Also, it is of note that the choice to set up fares by the transport operators at different levels will enable the operators to offer a range of services from the cheaper ones to high-quality services at the best fares. Different segments of passengers often display a range of preferences that can be met (World Bank, 2006; Ajiboye, 2017; Armstrong-Wright and Sebastien, 2000). Ommeh (2010) acknowledged that among the most intensively studied transport demand factors are the fares. This is because they are relatively easy to identify and quantify and they are the most easily adjusted variable due to several external factors which include government economic policies, changes in fuel price, cost of vehicular purchase, and operational services.

The primary source of revenue generation for the operators of public transportation is derived from the fares (Illes, 2005; Ajiboye, 2017). Therefore, fare constitutes the major financial source for all public transport operators, which are also regarded as charges or rates. However, for efficiency purposes, the total revenue earned must be enough to cover



the total cost of providing the public transport service (Illes, 2005; Dosunmu, Ajiboye, Ayantoyinbo & Olaogun, 2006).

In achieving efficiency in the bus transport system, adequate control of fare structure across all mode choices, transport routes, and quality of service cannot be overstated according to the World Bank (2006) which is more rigid than any other guideline. The systems may stipulate the operators' actual fares. Therefore, to justify the need for a ubiquitous fare structure across the board, it will ensure fares are affordably determined, mainly to the benefit of the passengers. Where a transport operator has a monopoly of operation, the abuse of powers must be prevented. For instance, if a route has many operators, it will also prevent the reliable operators from ganging up to form a cartel that may force the weaker operators out of the transport business by charging ridiculous low fares and then exploiting their oligopoly. Where there are many public transport operators, it will also be desirable to ensure that fares are consistent on each route (World Bank, 2006). There is a challenging situation for regulatory bodies and transport operators in determining the appropriate fare structure for bus transport services in Port Harcourt city, Nigeria. This similar experience has also been supported by Garcia and Reynaud (2004) and Wojuade (2017). Public transport is seen as a regular monopoly performing social services. The benefits of public transport services are many, some of them are: it is an efficient use of space, it emits fewer pollutants, it is more energy-efficient, and minimises the amount of land used for transport purposes (Aderamo, 2010). Due to the several benefits of public transport, governments in the third nations are now becoming aware that for the developing countries to be more industrious, there must be a remarkable transformation in the public transport services, and this should be a key priority area.

The Rivers Transport Company (RTC) is a state government-owned and operated public transport company. It operates alongside other competing public and private-owned transport services. RTC has grown over the years, intending to cater to the mobility demands of all income levels populace in Rivers State. In its course of operation, RTC has been facing numerous operational challenges such as high cost of operation, competition, policy inconsistency, fluctuation in its fare structure, and total lack of adequate regulation in the entire public transport sector in Rivers State.

Intermittent transport fare variation has been a recurrent situation in the operation of Rivers Transport Company, even among other public transport operators. This assertion has been buttressed in the study of Amamilo (2015); Dosunmu, Ajiboye, Ayantoyinbo and Olaogun (2006). The difference in fare cost has been a standard operational challenge among public bus transport operators in developing cities such as Port Harcourt. It can be significantly related to inadequate and inconsistent government policy implementation and monitoring. As buttressed by Ommeh (2010), RTC Port Harcourt is characterised by flexible fares, flexible routes, and unscheduled operations. The major challenge confronting RTC is its model of fare structure, and this emanates from the management ability to remain in business profitably, despite the limited resources and intervention from the state government.



Furthermore, in coping with other public transport competitors without a regulated fare structure, the direct effect of an unregulated fare structure for public transport operators such as RTC significantly causes a decrease in passenger patronage in selected routes, shortfall in revenue derivation, and high operational cost. In view this fact, it is key to understand that fare structure can induce an alteration in the public bus transportation sector, which affect the level of passengers' patronage, labour force, and sustainability of the transport company. Hence, this study examines fare structure and operational viability of the River Transport Company. In more specifically to examine the cost and frequency of trips on each route, and to examine the operational performance of RTC.

The major focus of this study is to illustrate theoretical relevance by adding to existing perceptions and knowledge of the subject matter. Findings will be of assistance in making available guidelines for relevant policy and decision-making process by the government as it relates to State Government owned public transports and others, infrastructural development to curb failures in the operation and determination of fares. The relevance of this study for the purpose of academic endeavour cannot be ruled out as students in the citadel of learning will find useful information which will aid them in academic research and vital improvement/enhancement

2. Literature Review

This study relied on relevant concepts and literature such as the concept of transport performance and productivity, and concept of affordability.

Concept of Transport Performance and Productivity. The transport performance productivity concept is the extent of output in passenger traffic produced from the engaged operational input. Productivity is the result obtained for the use of one unit of operational input or factor of production over a period of time (Obed, 2004; Baridoma, 2016). Performance and Productivity concept connotes efficiency implication in terms of passenger traffic and total trip generation and attraction, which includes both inward and outward movement of passengers, goods and other logistics services within a given period of time. It is evident that, the performance of any bus terminal operator is anchored on increased passengers and freight traffic. A public transport operator is said to be productive, if there is increase in passenger traffic both inward and outward, vehicular return trip time, parking space/lot and other factors that will ordinarily elicit positive reactions to enhancing increased passenger traffic must be rightly placed, adequately positioned and functioning rightly to be able to provoke positive changes or reactions to the productivity of the transport operator. Most measurement of transport productivity in road transport operation have used a mixture of both approaches as stated in solving similar problem arising from public transport fare organization and control. The output of public transport terminal (a service industry) provides the means of searching commodities between land and road transport operations, which can be measured in terms of passenger traffic. That is the amount of exact traffic that passes through an operator's terminal (or its parking lots, garrage) in a given time. This is regarded as the bus terminal measurement of productivity. Therefore, public transport performance is a lifeline that brings about



productivity in our contemporary public transport sector. For a public transport operator/terminal to be developed, productivity must gear towards its optimum level. This implies that, productivity could be used as a yardstick to measure public transport performance.

Concept of Affordability. This conceptual discussed below was adopted to drive forward the aim of the study, and it has also been incorporated by Nyarirangwe & Mbara (2007) in their study. Concept of affordability, as it applies to different groups of people, connote that modal choice decisions among different income groups are influenced by different factors. Among the low-income groups, fares charged are the main decision making variable. For the high-income groups, modal choice decisions centre on service quality (waiting time, travel time, comfort, etc.). Whereas operators' concern is more with the elasticity of demand for their service. Passenger responses to fare adjustments influence the overall ridership and thus the revenue generated. Therefore, the perceptions of passengers' about the service determine their elasticity of demand and the stability of revenue generated if fares are to be adjusted. However, in most developing countries, where the demand for public transport is generally inelastic due to inadequate services and limited available alternatives, the low-income groups face a desperate situation. The situation becomes even more critical where commuting distances are relatively long. The affordability patterns of the low-income groups are very critical in the overall sustainability of public transport. For instance, if fare increase results in the loss of poor passengers in an environment where there are limited alternatives, the chain reactions would be severe. This implies a curtailment of access to jobs, services and social interaction. Such socio-economic exclusion triggers poverty. Nyarirangwe and Mbara (2007) noted that in another similar study in the Chinese city of Wuhan, modal split was such that walking was the dominant mode followed by public transport and cycling. This was attributed to city morphology, which was largely compact such that employment, education, health care and other service facilities were located within walking distance of residential units. However the system has since changed, making public transport services indispensable. Fares vary by route depending largely on route length (which has a bearing on the number of modal options), quality and comfort of the vehicles. There were also no route transfer ticketing facilities, thereby forcing passengers to pay twice or thrice for a single home-to-work journey. Transit fares were actually cited as the main factor influencing modal choice. As a coping strategy households forgo better employment opportunities in further away locations and limited themselves to jobs within walking or cycling distances from their residential places. In view of the above, the situation of the RTC in the Nigerian context simply applies that fare structure has a great impact (on passengers, operator and demand) in the chain of operations. That is the commuters especially the urban poor populace who totally depend on public transportation for their daily mobility functions, would find it difficult to cope with unreasonable fare structure (charges). The rich talk less of affordability rather the look at quality of service, traveling time comfort and among other variables. Though fare structure in this context also affect transport operators, and it is a key factor that determines their stay in business or not.



Empirically, the study of Wojuade (2017) on public transport pricing in Nigeria; he acknowledge that public transport is an important social service that satisfies the travel needs of citizen. Hence, the need to regulate transit operations especially fare so as to make it affordable to the riders. This study examines the regulation and pricing of public transport operations in Lagos, Nigeria. Borndörfer, *et al.* (2012) looked at models for fare planning in public transport. They opined that fare systems in public transit allows to pursue objectives such as the maximization of demand, revenue, profit, or social welfare. From their analyses, they found out that setting fares can have a significant impact on passenger behaviour and, in particular, travel choice. Their study concluded that fare planning with its interdependencies between passenger behaviour and costs is a complex optimization problem.

The study of De Grange, Troncoso, Briones (2018) examined local bus industry in Santiago by considering their cost, production and efficiency. The cumulative cost structure of urban bus transportation in Santiago Chile is assessed for the existence of technical effectiveness, return to scale and economies of scale. Econometric model was deployed to assess both operator's cost and generated revenue, they deduced that when analysing the efficiency of firms and its production, it inferred an estimate decrease in returns to scale in manufacture, and that superior producers will definitely be more incompetent than minor producers. Further results showed that passenger's cost conveyed for elongated buses is higher than the shorter ones, and conventional buses. These outcomes are significant aspects for the intention of designing the business and its guiding structure.

Drdla and Bulicek (2012) studied fare collection system in integrated public passenger transport systems. Their study focus on questions of fare collection systems in the frame of integrated public passenger transport system as well as with requirements and standards of fare collection systems. The relations between fare collection system and tariff system, information and sale (distribution) systems are also mentioned next to it. A design and realization of fare collection system (FCS) is a complicated thing as it has been mentioned in the study

Todd (2018) assessed public transit benefits and costs best practices. Todd define how to create an all-inclusive structure for assessing benefits and costs of a specific transport service. Several of the methods utilised in the earlier study can be replicated in assessing alternative modes, such as biking and ridesharing. The study or Todd (2018) is an exploratory work that differ in methodological approaches to the current study.

Hans (2016) study on Fare Policy. Transit fare policy needs to be considered in the context of ongoing initiatives being undertaken by the City, the TTC and Metrolinx. This report provides a current state assessment of transit fare policy in Toronto, focusing as a first step on issues related to the existing GO Transit fare structure.

The study of Ubani (2005) on the assessment of the viability performance of the ENTRACO. Data for this study were secondary data collected from ENTRACO, Federal



Office of Statistics, Enugu and Lagos. The data collected cover information from 1989 to 1997. While the Multiple Linear Regression model was used to determine that there were relationships between ENTRACO's Net profit and total income, number of buses and its operational cost. In addition, Cost-Benefit Analysis (CBA) and Profitability Ratio (PR) were used to preliminarily analyze the viability of the company. The study found out that the viability performance of ENTRACO was presently unsatisfactory. The current study of interest took similar methodological approach from the study of Ubani (2005), but vary in study context, spatial location and inclusion of primary data (questionnaire survey) for adequate analysis.

The Performance of Private Transport Companies in South – western Nigeria was examined by Aworemi and Ilori, (2008). The study survey was carried out with a sample size of 270 persons, the actual sampling of the respondents was done purposively among private transport companies registered in the study area. The result output showed a substantial correlation between private transport companies performance and total number of functioning vehicles, staff strength, wages/salary trends, and age of establishment and these parameters had a positive relationships in relation to return on investment.

The study reviewed relevant literature focusing their attention on the subject matter across other nations, region and states in Nigeria. Considering the nature works done so far, there is an obvious gap to fill and as no known work has been carried out on fare structure and operational performance of Rivers Transport Company, Port Harcourt.

3. Methodology

This study was carried out in Port Harcourt, the capital of Rivers State and a port city in the South-south region of Nigeria. The RTC Head Office is situated along Olu-Obasanjo (Rebisi) Road - a prime and strategic location in the Port Harcourt metropolis. Port Harcourt is located on Latitude 4°46'N, and Longitude 7°01' E and 468m above sea level.

The study employed a cross-sectional research design to assess the fare structure and operational performance of Rivers Transport Company (RTC) Port Harcourt, Rivers State. Both primary and secondary data sources were used. Primary data was obtained from respondent survey, interviews and field observation. Secondary data was obtained through critical review of relevant literature among other information from relevant government transport establishments. Structured questionnaires were designed with open and close ended questions. The study population consisted of 80,500 public transport users emanating from 30 days passenger traffic RTC. Due to the large population of users, a manageable sample size of 398 was obtained using the Taro Yamane formula. The simple random sampling method was utilised administer the study survey.

The data obtained was analyzed using descriptive statistics such as percentages, frequency distribution tables, and cost benefit analysis. Multiple Linear Regression statistics was employed to test the hypothesis



Table 1: The Sample Frame

RTC vehicle types	Seating capacity	Frequency of daily trips	Frequency of monthly trip	Cost per trip	Routes Destination	The daily volume of passengers	Daily average	The monthly volume of passengers (in 1000)	The monthly average	Proportional method of allocation
Hummer Bus	15	225	9750	6100, 2200, 4500, 6500, 2000,	Abuja, Ekwulobia, Kwale, Lagos, Agbor/Asaba,	5000→6000	8000	15→18	24000	$\frac{24000 \times 398}{80500} = 118.6$
Long Frame	8 & 14	225	9750	3000, 2200, 1800, 2000, 2200, 3500, 2000, 2200, 1100, 6000, 7600, 6500, 1700, 1300, 3500, 1700, 600, 1700, 600, 1700, 2500, 1500.	Abakaliki Agbor, Akokwa, Asaba, Awka, Auchi, Ekwulobia, Enugu, Etim-Ekpo, Jos, Kaduna, Kwale, Nnewi, Owerri, Ogoja, Okija, Omoku, Onitsha, Okigwe, Uyo.	900→1000	1400	25→30	40000	$\frac{40000 \times 398}{80500} = 197.7$
Sienna	7	225	9750	8100, 2000, 2000, 2200, 2500, 4000, 2500, 2500, 2500, 1000, 7000, 6500, 2000, 1500, 2000, 2000, 2200	Abuja, Akokwa, Asaba, Awka, Auchi, Calabar, Ekwulobia, Enugu, Etim-Ekpo, Jos, Lagos, Nnewi, Owerri, Okija, Onitsha	400→500	450	10→13	16500	$\frac{16500 \times 398}{80500} = 81.5$
Total									80,500	398

Source: Researcher's Analysis (2019)

4. Results

Table 2 shows the fare structure and frequency of trips of the Rivers Transport Company. The cost of transport per route is majorly determine by measurable indices to include; the vehicle type, the distance covered and destination, and the nature of road among others. The frequency of trip of a user or customer's patronage for RTC is solely dependent on the cost of travel and other attitudinal characteristics of drivers and the general operators of the Rivers Transport Company. 67.3% of RTC passengers choose to travel with the company because they are satisfied with condition of service they received while patronizing the transport company. More so, it is important to note that 32.7% of the passengers were not satisfied with the services of RTC, pointing out certain attitudinal and operational constraint hampering customer satisfaction index to include; poor attitude and conduct of drivers, reckless driving at some point, poor condition of vehicles, variation in transport



fare, excessive charges on luggage's, uncultured staff who sale transport tickets, among others.

Table 2: Examine the Cost and Frequency of Trips on Each Route,

Vehicle types	Seating capacity	Daily trips	Monthly trip	Destination routes	Cost per trip
Hummer Bus	15	225	9750	Abuja, Ekwulobia, Kwale, Lagos,	8100, 2200, 4500, 6500
Long Frame	8 & 14	225	9750	Abakaliki, Agbor, Akokwa, Asaba, Awka, Auchi, Ekwulobia, Enugu, Etim-Ekpo, Jos, Kaduna, Kwale, Nnewi, Owerri, Ogoja, Okija, Omoku, Onitsha, Okigwe, Uyo.	3000, 2200, 1800, 2000, 2200, 3500, 2000, 2200, 1100, 6000, 7600, 6500, 1700, 1300, 3500, 1700, 600, 1700, 600, 1700, 2500, 1500.
Sienna	7	225	9750	Abuja, Agbor, Akokwa, Asaba, Awka, Auchi, Calabar, Ekwulobia, Enugu, Etim-Ekpo, Jos, Lagos, Nnewi, Owerri, Okija, Onitsha	8100, 2000, 2000, 2200, 2500, 4000, 2500, 2500, 2500, 1000, 7000, 6500, 2000, 1500, 2000, 2000, 2200

Source: Researcher's Analysis, 2020.

Table 3 clearly indicate the operational data obtained from the Rivers Transport Company (RTC) management for a three (3) year period to determine the viability performance or growth level between these periods. To ascertain the performance of the Rivers Transport Company, the cost benefit analysis (CBA) was applied on the following performance indicators: - the number of buses, operational cost, and total income. The data in table 3 show an increase in the vehicular fleet, 0.58% and 0.59% of profit margin for 2017, 2018, and 2019 respectively.

The available data on the parameters mentioned above were obtained for the evaluation of the operation of RTC. The net profits obtained at 1000 vehicles in operation for 2017 and 2018 were ₦246,365,810 and ₦256,310,766 respectively. In 2019 at 1200 vehicles, a net profit of ₦284,047,200 was attained. Their variation in the capital has to do with various variations in the number of vehicles, cost of operations, and fare structures over the three year period.

The Cost-Benefit Analysis of RTC indicates that the company throughout the assessment remains viable since there is a positive difference in growth between the total income and operational cost. It is more significant than zero for the entire period of the study. Consequently, the total income generated and the net profit are continually increasing as depicted. The income generated in 2017 was ₦420,408,810 and it increased to



₦480,109,313 in 2019. The net profit as of 2017 was at ₦2.4 million and this rose to ₦2.8 million in 2019.

Table 3: Examine the Operational Performance of RTC.

Year	Number of buses	Operational cost (₦)	Total income (₦)	Net profit (total income -operational cost) (₦)	% of Profit margin
2017	1000	174,043,000	420,408,810	246,365,810	0.58
2018	1000	184,502,202	440,812,968	256,310,766	0.58
2019	1200	196,062,113	480,109,313	284,047,200	0.59

Source: Researcher's Analysis (2020)

The profit margin of RTC under the evaluation period shows an excellent percentage given the efficiency of the Rivers Transport Company's operation. In 2017 and 2018, the Rivers Transport Company recorded a profit margin of 0.58 respectively, while in 2019, the company recorded an increase to 0.59. It can be deduced that there was an increment in revenue generated over the three (3) year period. The data shows that there was also an increase in the number of operational vehicles. This invariably means that the income generated was as a result of an increase in passengers' patronage.

Of the sampled passengers, 89% of them chose to patronize the Rivers Transport Company due to the following factors: transit flexibility, reliability, safety, comfort, adequate operational vehicles, and fair transport cost experienced in the course of their transit. At the same time, 11% of them described the operation of RTC to be near standard due to lack of adequate departure lounge, lack of comfort and space in some of their vehicles, a significant number of vehicles operating without air conditioners, and poor quality of service.

Examine the Cost and Frequency of Trips on Each Route

From the data obtained, cost of a trip in relation to the trip frequency invariably affect the general business performance of the Rivers Transport Company. The factors identified as leading cause to the variation of transport fare is in line with the outcome of Ogunbadede, Ilesanmi and Olurankinse (2010). They affirmed that pricing of petroleum products, sabotage by marketers and hike in the cost of product are the leading causes of unstable petroleum products which directly affect transportation cost. And this has also been corroborated with the views of Wojuade (2017). They assert that transport fare should be made affordable through effective policy. In considering the high volume of trips recorded by the company, high increase in operational cost and other environmental factors, the RTC fare structure have been one of the most customer friendly when compared to other public transport competitors.

Examine the Operational Performance of RTC

The findings on the operational performance of RTC does not corroborate with the works of Ubani (2005) who examined the viability of Enugu Transport Company and revealed an unsatisfactory performance of the transport company in its operation. However, the study



findings are in agreement with the study of Aworemi and Ilori, (2008), they affirmed that performance of Transport Company must be related with the total number of functional vehicles, staff strength and among other variables.

5. Conclusion and Recommendations

It was affirmed that several factors act upon the variation or change in fare structure of RTC. It is important to note that if customers are adequately notify on the advent of changes, it will strongly build more confidence on the side of users to company. Therefore, the Rivers Transport Company should be in fore front to champion the stability of transportation cost across all routes. Having in mind the type of vehicle, capacity and distance to cover. Fare structure has been acknowledged to be a determining factor in the performance of any transport company. The favourable competitive fare structure of the Rivers Transport Company has kept its operations healthy among other competitors in the industry. Hence there is a positive efficiency in the viability of Rivers Transport Company.

The study, therefore, recommend that the state government should constitute a public-private partnership (PPP) agency with synergy to oversee the development of a fare structure framework for RTC and amongst other intercity public transport operators. This will address the issue of the operator's monopoly. The operators and regulating bodies must ensure the safety of lives, the durability of vehicles, and adequate training and retraining of staff in order to ensure continuous user patronage. Performance assessment should be carried out yearly to ascertain the commercial viability of the company.

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