

Relationship between Human Resource Effects and Productivity in the Nigerian Transport Industry

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ABSTRACT:

The Transport industry in Nigeria has suffered from lack of critical and vital information concerning the extent of manpower development. In addition, information on the quantitative relationship between manpower developments and the level of corresponding productivity are not readily available. Therefore there is need for extensive research on the relationship between human resource development and related productivity in the Nigerian Transport industry. It is on this ground that the objective of this study which is to establish a relationship between the human resource effects (i.e. the level of training and the academic qualification) and the productivity in the Nigerians transport industry stands. Primary data sources comprise of directed questionnaires that were administered to the parastatal and the transport firms of all modes of Transport (land, sea and air). Secondary data sources comprise of existing documents that have been published from various transport organisations. Data collected from the study were analysed using descriptive statistical methods like the frequency distribution, correlation technique and the frontier model. From the results of the analysis it was discovered that majority of the workers in the transport industry were unskilled with only a few workers possessing higher degrees, despite the positive relationship observed between the between human resource effect and the productivity. In conclusion it was seen that effects of productivity in transport firms in Nigeria depends largely on labour and capital inputs than on human resource effect.

Keywords: human resource effect, productivity, transport, labour, capital, aviation, maritime, inputs, output, frontier model.

1.0 INTRODUCTION

It is not a subject of argument that the transport industry in Nigeria lacks the requisite manpower in terms of capacity and the quality. Perhaps one of the most prominent problems facing the transport industry is the lack of adequate human resource to service the industry. Inadequate human resource in this respect is with regards to lack of trained personnel having the requisite skill with adequate compensation and a drive to deliver. Even where sufficient manpower exist (Knowing that Nigeria has a teeming population above 160 million according to the 2006 census reports with a considerable number falling within the labour force according to next generation reports) 'the square peg to round hole' syndrome still exists to a very large extent in many transport firms in Nigeria. Manpower development as an essential element for growth and development when properly utilised leads to productivity. It is also worthy to note that a nations greatest resources are its people. On this premise, one can agree with Owolabi and Okwu's assertion that Investment in human capital plays an important role in increasing competitiveness, improving quality of life

of the population and in generating economic growth and development of a

Country. Goux (2000) suggests that greater economic development creates room for greater articulation, development of capacity to initiate plans, organize and to control the natural endowments which constitute greater economic base when transformed to a productive use.

It is worthy to note that there are several factors to consider when it comes to transport undertakings. As rightly stated by Armstrong (1998), the economic and operating efficiency of bus undertakings is dependent upon a multiplicity of factors. Sometimes a few of these factors and their effects on public transport operation are inextricably intertwined. For instance, investment in human resource (training of staff) and disregard (little or no investment) for the vehicle upkeep or bad replacement policy may still affect productivity negatively. So despite the assertions above (i.e. that human resource can have positive effect on productivity) there are arguments that the Nigerian transport sector currently needs to concentrate more efforts on capital development and infrastructure owing to the fact that it is in a deplorable state.

Doing this may in fact improve productivity and enhance the countries chances of achieving the Millennium Development Goals (MDGs) as transport is an undisputable arm that affects every facet of life. Based on these theories the researcher has undertaken to make an enquiry into this area to find which of the theories will boost the countries chances at increased productivity.

1.1 HUMAN RESOURCE, PRODUCTIVITY AND THE NIGERIAN TRANSPORT SECTOR

Human resource refers to that aspect of business or input that has to do with people. The human factor is the most sensitive and volatile of all factors of input in production and therefore requires proper handling so that the other factor inputs can be properly harnessed to the utmost advantage of all in the industry. Aspects of empirical knowledge that have dealt extensively with human resource include industrial psychology and social sciences like anthropology; and within their confines are aspects behavioural theories, motivation etc. One way or the other humans affect Productivity.

Wikipedia defines productivity as a measure of the efficiency of production. It goes further to state that productivity is a ratio of production output to what is

required to produce it (inputs). The measure of productivity is defined as a total output per one unit of a total input. These definitions are general but in the context of this study I would define it as the tangible results based on scarce resource (investment which may go to human resource resulting in an opportunity cost of capital development expenditures). Productivity in the transport sector will be most aptly defined for this research as the movement of goods and services such that time, place and form utility are optimally achieved. The transport sector owing to its nature affects all other aspects of the economy (e.g. manufacturing, health, agriculture etc) and as such has reasonable influence on productivity. While other aspects of the economy are dependent on the transport sector, it is in itself dependent on human resource to function. To this end we can see the pattern that exists between human resource, productivity and the Nigerian transport sector.

1.2 PROBLEM IDENTIFICATION

The lack of continuous and vital information concerning the extent of manpower development affects the overall productivity in the transport industry in Nigeria and this initiated the need for this research. Past planners in the transport industry failed to make investment in the human resources development, which is a central theme for development strategies,

Sriyan (1997). He further reveals that it was due to partly the problem of distinguishing what part of human resource development that represents an investment and what part of it represents consumption. While investment in human resource promotes economic growth, the country's economy also determines its ability to invest in its human resource. This corresponds with the assertions of Danny and Vinod (1993). As stated, the earlier development strategies, which largely neglected the social aspects of development did little to promote growth and this resulted to political and social unrest in several countries, Danny and Vinod (1993).

Drunker (1997) maintains that high productivity depends on the quality of human capital and the extent to which human resources are used. He advises the underdeveloped countries to borrow a leaf from the developed countries in that respect. Wyckoff (1996) supports that education, management and training shorten the time-span within which a country with low wage cost can achieve higher productivity. However with higher productivity wages will rise. This is because human resource developments contribute to a more equitable distribution of income. It therefore negates the necessity for compulsory distribution measures (such as through the tax system

which usually have negative consequences).

Notice that earlier works cited in this subsection were only able to proffer solution to the problems of manpower development as it affects productivity and hence its socio economic implications but they were unable to proffer quantitative relationship between manpower developments and productivity. Thus, a significant gap exists which this study aims at filling up and hence create a platform for further studies in human resource development and productivity.

1.3 OBJECTIVES OF STUDY..

The objective of this paper however is to study the investment in human resource and to find its effect on productivity. The aim is to see if there would be better results (in terms of productivity) if this expenditure is alternatively channelled to capital development and infrastructure in the countries transport sector.

1.4 HYPOTHESIS TEST

The hypothesis to be tested was drawn based on the objectives of the study. They are as stated below;

H₀: Human resources have no significant relationship with productivity in Nigerian Transport firms (Null Hypothesis).

H_A: Human resources have a significant relationship with productivity in Nigerian Transport firms (Alternative Hypothesis).

organisation hence effective training ensures that members of staff are able to

1.5 SIGNIFICANCE OF STUDY

This study will shed more light on the Nigerian transport sector especially with respect to human resource developmental efforts. It will also help in determining which areas more efforts should be concentrated on for developmental purposes.

1.6 SCOPE AND LIMITATION OF STUDY

This study looks at transportation in Nigeria holistically although it must be clearly stated that transport and transportation is a function of several variables having four basic means (i.e. air, land, water and pipeline). Another factor due consideration is difficulty in measuring what constitutes human resource effects in productivity (Sryan 1997).

2.0 REVIEW OF RELATED LITERATURE.

2.1 TRAINING AND MANPOWER DEVELOPMENT.

Training and development is that main instrument in preparing the human resource for the team work climate of the modern organisation. The human resource is an essential component of a successful

work effectively in meeting the organisations goals including consulting and maintaining of complex systems. Traditionally training is considered as the teaching of a person or an animal to perform a particular job or skill well which involves regular instruction and practices. Education and training are the most important factors in human resource development, Owolabi & Okwu (2005).

It is necessary to note that the training is aimed at improving the quality of the manpower, so as to meet up with the new challenges. Lee et al (2002) questioned the yard stick for measuring quality of manpower in the transport industry; whether it is to be judged as a product or a process. With respect to maritime education he questioned thus: do we count the number of students who secure jobs immediately after graduation, or do we look at those taking a career in education? Are we measuring knowledge? If so, do we define it as the technical expertise or as more general cultivation of the intellect? Or do we determine it by the qualities that the employers say that they want? Basically, Nigerian tertiary institution remains a key driver for such training for our teeming

transport professionals but can the quality of higher education actually be defined. Perhaps quality can be assessed based on experience and output level.

Van Ark et al (1999) argues that despite “twenty years expertise and the operation experience in quality assurance in higher education” there is no growing consensus on how the concept of quality should be defined. He admits that there are too many possible criteria. The variation notwithstanding, we shall extend our quest to establish few commonalities that might lead to better understanding.

2.2 INDEPENDENT LEARNING, TRAINING NEEDS AND PRODUCTIVITY.

Independent learning in this context is the acquisition of knowledge without being dependent on external expertise. It is mainly experiential in nature and practice based. A model of this type of learning in modern times can be seen in the stimulation of students through problem focused approach and making materials or other related tools necessary for study and finding solutions available. According to R.A Jackson et al (2005) in their paper, team organisation and independent learning in the engine simulator laboratories students are expected to take an active role in learning by preparing for each lecture and simulator session by reviewing manuals which have been

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handled earlier on via the internet before each lecture.

The core issue here are that the students be given enough information to understand and manipulate the engine simulator but also not so much by a click by click tutorial. The student should be able to truly understand the system. The system requires them to take out time on their own to work out enough procedures and find solution to any problem that occurs. They are also expected to prepare for the following session by practising simulator operations on the park task trainers outside of normal class time. This is believed to be a productive approach to human capital development as the trainees are pushed beyond known limits/solutions and are encouraged to explore.

According to the Human Development Report of UNDP (2008), Nigeria is still at the low level of human development compared to countries in emerging economies. A pertinent question at this point is does this affect productivity in the countries transport sector? Human resource has been identified not only as a major growth determinant and a channel to ease poverty but it is also very important in building or improving the quality of human beings in general (Kasim et al, 2010). On this premise it is deemed valid to raise the question, what is the country doing with respect to manpower

development? Several strategies and policies have been put in place, one of which is the growth focus in Millennium Development Goals (MDGs) which is more concentrated at the importance in achieving clear and real progress as an indicator or human capital indicator measured through educational foundation.

Human resource needs are not the only factor affecting productivity in the transport sector. According to Adeola (2005), the most important constraints to productivity growth in Nigeria are;

- The absence of a consistent and long-term strategy for productivity improvement.
- The extensive dominance of the public sector in the economy, which stifles private sector initiatives and operations.
- The very weak corporate linkages among the various sectors of the economy – business linkages facilitate innovation, higher productivity through specialization and flexibility in meeting customer needs, and enables economies of scale.
- The weak linkage between the educational system and the requirements.

There is also the question of infrastructural development. All this go to show that there

is work to be done however, the question now is in the best approach. Should we as a nation concentrate more on human capacity development (based on current trends) as an approach to increased productivity or should we look towards capital and infrastructural development as a priority?

2.3 THE RESPONSIBILITIES OF PLANNING AND THE EVALUATION SECTORS IN MANPOWER DEVELOPMENTS.

Based on the above assertions it is worthy to note in development programmes of any sort a lot of planning need to be done. With respect to this work some of the responsibilities of parastatals involved in the planning and evaluation of manpower development in the country include the following;

1. Assessing, monitoring and evaluating training programmes conducted by both levy paying establishments and the companies exempted from the levy.
2. Evaluating the request from the levy paying for the reimbursement of vocational training costs.
3. Carrying out studies that evaluates the training plans submitted by the private sector establishments for the determining exemptions from levy contributions and makes

recommendations to the high council for vocational training for final approval.

4. Issuing training statistics required every two years relating to the activities conducted under the supervision of the high council.
5. Producing monthly, quarterly reports for interested bodies.

2.0 METHODOLOGY.

Data was collected from some firms in each of the three major transport sub-sectors mentioned earlier. The administration of questionnaires was used to gather necessary information in the course of the work. In the land transport sub-sector, some of the transport companies data were collected from ABC Transport Company, Chisco Transport company, Ministry of Transport and the National Union of Road Transport Workers. Similarly in the rail and the maritime sector, data were collected from the Nigerian Railway Corporation, National Inland Waterways Authority (NIWA), Nigerian Maritime Administration and Safety Agency (NIMASA), Nigerian shippers council (NSC), Nigerian Ports Authority (NPA), INTELS Nigerian Limited and Maersk Sea

land who are major terminal operators in the Nigerian ports. In the aviation sectors relevant data were collected from the major airlines, Federal Airport Authority of Nigeria (FAAN), Nigerian Airspace Management Agency (NAMA). Analytical Techniques adopted to measure the relationship between manpower development in these above mentioned firms and their corresponding Productivity. Analytical tools of the data collected included frequency analysis, ordinary least square techniques, correlation analysis, and the application of the frontier model (FM). The data on which the study is based were collected from the above mentioned transport firms operating different modes of transport services. Copies of the questionnaire were randomly distributed to the employees of the transport firms. The total number of companies sampled in the course of this work was 49. All responded giving a 100% response rate and providing the basis for discussion in the paper.

4.0 DATA ANALYSIS & DISCUSSION OF RESULTS.

The quest for greater productivity in organisations particularly in the transport sector is never ending as managers are always under pressure to improve the performance of their organisations. Therefore it is indeed the responsibility of

managers to achieve better results from the resources allocated to them. Here the frontier model helped to compare the degree of human resource contribution to productivity level of all transport modes excluding the pipeline mode. The modes utilise homogeneous resources referred to as inputs to generate a homogenous output using a common unit of output by simple proportion conversion.

Table 4.1 OLS ESTIMATES OF THE RELATIONSHIP BETWEEN PRODUCTIVITY, LABOUR CAPITAL AND HUMAN RESOURCES.

TABLE 4.2 OLS MODEL RESULT FOR LABOUR, CAPITAL AND HUMAN RESOURCE EFFECT.

Variable	Coefficient	Standard error	t-ratio	P[T >t]	Mean of x
Constant	2.18195304	.21815331	10.002	.0000	
Capital	.13949674	.05230474	2.667	.0083	2.41502852
Labour	.12940793	.04826853	2.681	.0098	3.75869409
Hmreffect	.09149178	.05816388	1.573	.0095	.67053579

Source: model run from frontier analysis software.

4.2 Interpretation of OLS estimates of the relationship between labour capital and productivity.

Productivity measures based on hours worked have a conceptual advantage over the head counts productivity measures which are based solely on the number of

workers. Data on the hour worked gives a better indication of the volume of the labour inputs because a measure of the hours worked allow for accounting of different working patterns. Therefore to drive home these points, our analyses reveal a positive relationship between the

overall productivity (of the 49 transport firms that were sampled), capital and the labour inputs. This relationship is represented in the model below.

$$Pclh=2.18195304+.13949674CAP+.12940793LAB+.09149178HRE+\varepsilon\dots\dots\dots eqn1$$

$$Pcl=8.6013+0.1395CAP+1.0844LAB+\varepsilon\dots\dots\dots eqn2$$

From equation 1 above it can be seen that the labour capital and human resources effect are positively related to productivity. This implies that as the productivity increase as the outputs increases over the inputs having a productivity derivative of 0.0915 human resources effect has lower contribution to productivity as compared to capital and labour input capital has the greatest of .13949674 followed by labour with 0.1294. This implies that transport firms in Nigeria invest less in the training of their staff and thus have more unskilled than the skilled employees. Thus the capital cost such as depreciation and the labour inputs such as the sum or the amount of the hours worked by the employees of these firms make the significant contributions to productivity.

The model further reveals that the productivity derivative arising from labour input is of greater magnitude than that of the capital having coefficients 1.0844 and

0.1395 respectively. This shows that for a slight increase in the amount of hours worked by the employees productivity increase by approximately 1.08 times. In the same vein the slight increase in the capital cost productivity increases by 0.14 times. The coefficient of determination in the model gives a 69% goodness fit which proves that capital and labour explains 69% of the variations of the productivity around their mean. The remaining 31% of the variation in the productivity is accounted for by the regression line which can be attributed to the factors included in the disturbance variables or error term ε .

4.3 Test of hypothesis.

H_0 : Human resource has no significant relationship with productivity in Transport firms. (NULL HYPOTHESIS).

H_A : Human resource has a significant relationship with productivity in the Transport firms (ALTERNATIVE HYPOTHESIS).

It was discovered that the standard error for the human resource effect variable is greater than half of the parameter estimate that is $S.E > 1/2B_3$. This implies that human resource effect in the Nigerian transport companies is not statistically significant hence we reject the null hypothesis.

5.0 CONCLUSION AND RECOMMENDATION

From our findings, it is clear that the Nigerian transport sector largely ignores human resource as a means to increased productivity. Productivity in our transport firms do not really depend on human resource effect but mostly depends on labour and capital inputs. The conclusions regarding the returns to training do not depend on the choice of the capital measurements available to us. This is because human resource effect may be significant at 1% level using a fixed effect estimator (De Kok, 2000) for both the gross production and the value added if capital is measured by depreciation cost. Therefore if firms increase their relative amount of training, motivation and support, they are likely to benefit more from the courses those employees take with respect to their overall productivity. The impact of labour on productions is measured using the amount of the working days spent in training and not the training cost. This is because using training expenditures yields less significant result and can be seen to confirm the above assertion.

It is therefore recommended that transport firms should invest optimally in human resources developments in terms of manpower training in the organisations. Transport Managers should be able to give enough motivation to their workers which will invariably increase their efficiency

and hence the productivity of the firms. The government should make adequate provisions for the transport sector by way of infrastructure to boost the output level of each sub-sector.

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