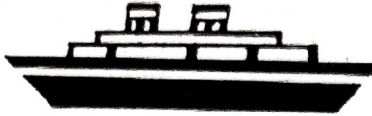
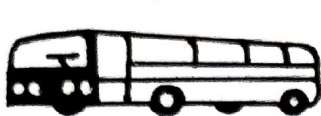




# THE TRAINER



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# TRANSPORT AND DEVELOPMENT



# NIGERIAN INSTITUTE OF TRANSPORT TECHNOLOGY (NITT), ZARIA

## FIRST INTERNATIONAL CONFERENCE ON TRANSPORTATION OF DANGEROUS MATERIALS (DANMAT '99)

### CALL FOR PAPERS

The Nigerian Institute of Transport Technology (NITT), Zaria, wishes to invite Professionals and Academics to send technical papers for assessment and presentation at its First International Conference on the Transportation of Dangerous materials (Danmat '99)

**DATE:** 20TH TO 24TH SEPTEMBER, 1999

**VENUE:** ABUJA SHERATON HOTEL AND TOWERS, ABUJA.

### *Theme:*

## TRANSPORTATION OF DANGEROUS MATERIALS IN THE THIRD MILLENIUM

### *Sub-Themes:*

- \* Dangerous Materials and the Environment
- \* Dangerous Materials and Transport Technology
- \* Emergency Preparedness (Environment and Health)
- \* Dangerous Materials Transportation and Legal Implication
- \* Safe Transport of Radioactive Materials
- \* Modalities and Technicalities of Transporting Toxic and Hazardous Substances
- \* Collection and Distribution Technique of Toxic Chemicals
- \* Dangers of Liquefied Natural Gas Transportation Through Water Mode
- \* Disposal of Dangerous Materials Containers
- \* Packing, Storage and Securing Dangerous Materials
- \* Storage Modalities for Dangerous Materials
- \* Safety, Security and Insurance
- \* Emerging Areas of Thought in Dangerous Materials Transportation
- \* The National Transport Policy and the Transportation of Dangerous Materials
- \* Other Areas of Relevance to the Theme of the Conference

### *Specification For Papers:*

- \* The Conference Language for Paper Submission is English
- \* 3 Copies of each Paper with and Abstract of not more than 250 words should be submitted to the Conference Editor through the Address given below
- \* Papers should not be more than 15 pages - double spacing with
- \* The full text Papers accepted for the Conference Editor on a 3.5" Diskette preferably in:
  - Word Perfect 5.1 for DOS
  - Word Perfect 6.0 for Windows OR
  - Microsoft Word
- \* Pages containing Diagrams should be distinct. Diagrams must be very legibly drawn and clearly labelled.
- \* Audio-visual aids will be provided on the Conference Venue.

### **IMPORTANT DATE**

Closing Date for the Submission of Abstracts - 3rd of February, 1999  
Acknowledgement of Acceptance of Paper by the Secretariat - 3rd of March, 1999  
Submission of Full Text of Papers by Author(s) - 1st of May, 1999

### **CONFERENCE FEE**

Nigerians	- N5,000.00
Non Nigerians (ECOWAS Residence)	- CFA50,000.00 (Payable Before March 31, 1999)
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Nigerians	- N6,000.00
Non Nigerians (ECOWAS Residence)	- CFA65,000.00 (Payable Before March 31, 1999)
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### All Papers and Correspondences should be sent to:

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## Foreword

*The issue of relationship between transport and development has been a subject of controversy over the years. It has attracted the attention of researchers in various fields of transport. The examination of both theoretical and empirical explanations of the role of transport in the regional economic development is very crucial especially in this stage of our national development.*

*The need to maximise the utilisation of our dwindling resources and at the same time meet the ever increasing demand for transportation requires indepth and thorough analysis of transport and development relationship. This is to unravel the possible consequences of under-investment and over-investment in transportation. Such discoveries will provide useful information to the policy makers to make better policy decision as regards to transport investment.*

*This is why this edition of The Trainer focuses on issues of "Transport and Development". Also featured are special reports on issues in multi-modal transport operation in Nigeria as well as reports on recent publications in transport which are available in the Institute.*

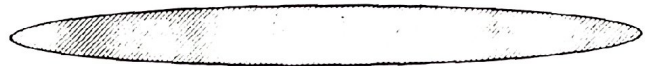
*There is no doubt that the articles presented by different experts in this edition will provide useful inputs for students, researchers and professionals in the transport sector.*

## NEXT EDITION

The edition of the journal will be focusing on "Transport and Environment".

Articles are therefore invited from interested authors in the following sub-themes:-

- \* Water transportation and environment
- \* Road transportation and environment
- \* Air transportation and environment
- \* Rail transportation and environment
- \* Pipeline transportation and environment
- \* Other transport and environmental related areas



## INSTRUCTIONS FOR AUTHORS

1. Articles may be invited by the Editor or may be offered unsolicited by authors.
2. Articles written are to be typed in double-line spacing.
3. Articles should contain the title page and abstract of 250 words with names and affiliations of all authors, names and addresses for correspondence.
4. The main text with sections and subsections should be clearly numbered.
5. Each article sent should be in three copies with a maximum of 15 pages including diagrams, tables and figures.
6. All articles should be written in English Language.



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## CONTENTS

	Page
<b><u>CHANGING PATTERN OF URBAN GROWTH</u></b> THE IMPLICATIONS FOR TRANSPORT SYSTEM DEVELOPMENT IN NIGERIA	5
<b><u>TRANSPORT AND REGIONAL ECONOMIC DEVELOPMENT</u></b> SOME THEORETICAL AND EMPIRICAL ISSUES	19
TRANSPORT AND RURAL DEVELOPMENT	22
<b><u>DEVELOPMENT NON-MOTORISED TRANSPORT IN THE NEW STATE CAPITALS IN NIGERIA</u></b> THE CASE OF GUSAU AND DUTSE	29
ISSUE IN MULTI-MODAL TRANSPORT OPERATION IN NIGERIA	34
TRANSPORT AND ECONOMIC DEVELOPMENT IN NIGERIA: AN ANNOTATED BIBLIOGRAPHY	37

## SUMMARY OF 1999 RESEARCH AND CONSULTANCY ACTIVITIES

The Department of Research and Consultancy is one of the three academic departments of the Institute. The department is saddled with the responsibility of conducting researches in transport, socio-economic and environmental issues. The information provided by such researches are often used for training as well as for policy and planning purposes.

In addition, the department is involved in consultancy services. We have rendered so many consultancy services to both government and private organisations. The following programmes and studies have been scheduled for the year 1999:-

- i) **National Transport Survey and Projection**  
This study is expected to cover all modes of transport existing in the country. The study, when completed, will provide database for transport planning and projection in Nigeria.
  - ii) **Road Transport Regulatory Body Study**  
This study is expected to provide detail information on the operation of road transport in Nigeria and framework for the establishment of proposed Road Transport Regulatory Body.
  - iii) **First International Conference on Transportation of Dangerous Materials (DANMAT '99)**  
This Conference is the first of its kind in Nigeria. Participants are expected from all over the world to deliberate on issues relating to transportation of dangerous materials. If you are interested, you can contact the Institute today, for detail information.
  - iv) **A Freight Transport Simulation System for the Nigerian Economy**  
This is basically meant to develop a freight simulation model for forecasting purposes particularly for freight flow in Nigeria.
- The Department is at your service for any research and consultancy services in transport planning, operation and management.



# TRANSPORT AND REGIONAL ECONOMIC DEVELOPMENT: SOME THEORETICAL AND EMPIRICAL ISSUES

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## INTRODUCTION

The relationship between transport and economic development is a matter of much theoretical interest and practical importance and one that has received considerable attention over many years in both the developed and less developed countries. It is also an extremely topical and controversial area of study. Economists seek to explain how transport infrastructure development and improvement can be included in their theories of regional economic growth. Geographers are more concerned with the spatial implications of such development and on the other hand, would like to know more about the relationship since it would help in the general allocation of government expenditure in the economy.

In the light of this, this paper tries to examine some theoretical and empirical issues generated in explaining the role of transport in regional economic development. In addition, it also examines the nature of relationship between transport and economic development of a country. In doing this, the presentation is done under the following sub-headings, introduction, transport's role in regional development, theoretical explanations, relationship between transport and development. Others include, empirical appraisal of the role of transport and conclusion.

## THE ROLE OF TRANSPORT IN REGIONAL DEVELOPMENT

Transport plays a crucial role in the political, economic and social progress of a country. These days it must be considered in every stage of national and regional development planning. No wonder Munby (1968) said that, "there is no escape from transport." In the advanced countries, much attention was paid to transport innovation during the formative years of industrial growth; today, new strategies of economic planning require the modification or renewal of inherited transport systems. In the less-developed countries there is widespread concern for transport in the context of the desire to promote rapid economic development.

## THEORETICAL EXPLANATIONS

### Export base theory

The theoretical role of transport in regional economic development can be derived from the applications of two somewhat related theories. The first one is economic base theory. The theory expresses the idea that growth of a region is directly dependent on the concept of the international trade multiplier. Economic base theory may be considered as the first element of theory of transportation and development. In its original formulation, the doctrine says that the growth of a small area is directly determined by its ability to market its products and services outside its boundaries.

During the 1930s Hoyt thought that the ability of a city to sustain its economic activities depends on its ability to export goods and services to the rest of the world. He also thought that the total size of the economic activity of a city is a constant multiple of the export sector.

This theory was modified by Blumenfeld who argued that what determines the economy as a whole is the service sector but not the basic or export sector. This was also modified again by Tiebout, who also argued that the quality of the service sector may determine the quantity of the export sector which also helps to determine the quantity of the service sector.

Under a strict application of export base theory, the role of transportation can be described, but not economically evaluated, because it is not analytical in nature. Finally, the base theory has little application to the problem of an underdeveloped region which is characterised among other things, by seeming inability to develop an export base. Looking at multiplier analysis of the export base theory, there is of course, very little that transportation can do to increase the general propensity to consume, but there may be much it can do to increase the propensity to import within the region.

### TRADE THEORY

Among theoretical explanation to the role of



transportation in development is the trade theory. This theory is explained through input-output technique which basically tries to explain the relationship or link among various sectors within a given economy and the stimulus generated from one sector to the other. It is recognised that trade pattern and geographical distribution of activities mutually determine each other and there would be no reason to treat trade and location theory separately.

In order to determine the cost of production of a particular good, transportation cost has been considered, and once the transportation costs are introduced into the theory, the relationship between the transportation and growth can be analysed. Therefore, it could be concluded that what determines the volume and direction of a region's exchange is its efficiency in manufacturing and distribution of its goods at an advantage over other regions. Comparative advantage should therefore, be considered as the resulting force of two components, a production advantage and transportation advantage.

This shows that the nature of regional specialisation is dependent on the cost structure of interregional transportation system. Having looked at comparative theory of international trade, some very important conclusions can be drawn.

- a. The effect of a general decrease in transport cost is to give greater locational influence to the production cost differentials between regions.
- b. The improvement in the transportation system of a particular region can shift comparative advantage between regions.

### **RELATIONSHIP BETWEEN TRANSPORT AND DEVELOPMENT**

The nature of relationship between transport and regional economic development is the bone of contention among scholars. Attempt is made here to explore some theoretical explanations offered in the literature to explain the nature of relationship between transport and development. There is no doubt that transport play a crucial role in regional economic development, but what is not clear is whether transport is in fact, a fundamental prerequisite for economic development.

It has been tacitly assumed, at least in the West, that adequate transport facilities are basic for economic development, that they are necessary condition for, and actively automatically promote economic development. Hunter (1965) however, questioned this assumption and pointed out that in the centrally planned economies, e.g. in the Soviet Union and in the Chinese people Republic, the role of transport was accorded a secondary rather than a primary role in economic development.

Hunter came to the conclusion that whether in centrally controlled or capitalist dominated economies, transport develops as a concomitant of economic development, not as a prerequisite for it. To buttress his argument further, he quoted the example of the role of the railway in the development of United States in the nineteenth century which demonstrated that massive expansion of transport capacity is not a prior condition for economic progress.

Eliot-Hurst (1974) also buttressed this argument and asserted that "Without resources to be utilised, access has no meaning." The implication of this statement is that any transport development is quite superfluous and hence is unlikely to be provided unless there are potential resources demanding transport for their realisation. Eliot-Hurst however, did not dispute the importance of transport since it is undeniably a fundamental factor in economic development as it was earlier mentioned.

The idea about the nature of the relationship between transport and development may be said to fall into three categories. First, there is the traditional and generally accepted view, that the provision of transport facilities is a precondition of economic development and results in a positive stimulus. Secondly, there is the view that transport postdates economic growth or, in other words, as a result rather than a cause of economic development. The third argument is the neutral view that transport development is concomitant with economic growth, that it is neither a pre-requisite for, nor result of economic development, but goes in hand with it and is neither more or less important than any other factor or element in economic growth and development.

Social scientists who have involved themselves in transport studies particularly geographers and economists have tended to reject the so called traditional assumption of transport being a precondition for economic development. But they have moved toward the third view that sees transport as concomitant to development. This is reflected in the word of G.W. Wilson "transport investment is no more an initiator of growth than any other form of investment or deliberate policy". Therefore transport development is concomitant with economic growth and functions merely as one factor in the varied infrastructure that is required for economic development.

Hoyle (1973) in his contribution, warns against making gross over simplification in the transport development relationship and says "the transport development relationship is essentially a two-way interaction and depends upon the type of economy involved and upon the level of development at which transport improvements are effected." At any given stage of development, an area requires a certain level



of transport provision in order to maximise its potential. There is thus an optimum transport capacity for any development level. The existence of unsatisfied supply of transport may over time, have serious effect on the economy. Conversely, the results of over capitalisation may be detrimental if too much is spent on transport provision in anticipation of demand which never materializes.

### **Empirical appraisal of The Role of Transport**

Transportation becomes a critical factor in regional growth since it determines the extent to which an area can capitalise on its economic endowment for generating export. In a general sense, the endowment of a region is determined by the cost of labour force, the abundance of its materials, the size of its market and the agglomeration factors of its urban centres. Because, these four locational factors vary geographically, regions differ in the attraction or pull that they exert on the industry.

In general, the literature that has explored the actual relationship between transportation and development is too fragmentary to provide a good test of theory (Gerald Kraft 1971). Empirical investigations carried out in U.S.A. have proved that transportation has been a major consideration for the location of industries, the locational advantage is tended to be near major market and sources of labour. Transportation has also been seen as a direct cause of industrial decentralisation, a decline in short haul cost relative to long haul cost and tends to disperse activities by promoting industrialisation around regional markets, where as an opposite shift in the ratio stimulates the reverse trend.

In the early 1960s, social geographers had speculated that environment was indeed a primary determinant of regional growth and migration, the hypothesis was corroborated by most studies that have analysed locational shift in industry. Some economists contend that there is little left for transportation in shaping regions, they contend that instead of directing the geography of growth, transportation will have to be adopted to the geography and growth pattern.

In other words, transportation is a result rather than a cause of economic change, and policy makers should implement transportation programs on the basis of the effects of the economy on transportation rather than on the reverse since as the theory goes that the demand for transportation change has caused or resulted from mobility of industries, it has locational effects and can generate its own demand. In other words, wherever it may start, there is a chain of reactions between transportation and development.

On the whole, transport will greatly influence the shape of future regional development particularly in most developed countries like the U.S.A. and European

countries. Although, under certain circumstances it may help a region to capture a fair share of decentralising industry. The diminishing role of transportation in influencing location choices should not be too surprising in a country where transport network is very extensively spread (Gerald Kraft et al 1971).

Rapid technological changes and innovations in the field of electronic and computer communications systems through the use of E-mail and internet may also reduce the influence of transport in regional development. Ability to send messages and mails without physical movement of goods and persons will greatly affect the future role of transportation in shaping regional development.

### **CONCLUSION**

The objective of this paper is to review the theoretical and empirical issues of the role and relationship between transport and development. This is to establish a theoretical framework on which transport's role on the economic development can be evaluated, as well as to examine the nature of relationship that exists between transport and development. There is no doubt from the above analysis that transport plays a crucial role in development, and that, at every stage of development the role of transport can be evaluated to determine when to increase or reduce investment in transport facilities, to ensure that transport does not constitute bottleneck to economic development.

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