

FUTURE PROSPECTS IN TRANSPORTATION MANAGEMENT IN AFRICAN REGION

By AKUMUNTU JOSEPH, Research Scholar, Procurement & Transportation Management, IIC University of Technology, Cambodia.

ABSTRACT

In general, transportation is categorised into four major modes: land, air, sea and rail. Path tends to be the prevailing way in sub-Saharan Africa. During the colonial era, railways were built but almost abandoned in most nations after independence. Once used as an indication of economic growth and a sovereign instrument, air travel is far from competitive. Shipping is mostly on the coast and mostly under international influence. In this context, the key form of transport is road transport, which is favoured by the low buying power of citizens and the continent's geography of landlocked territories. But this mode faces various challenges: inadequate upkeep, noise, regular injuries, local business lack, etc. Critical thinking and creative thoughts from different players in the market would also be necessary to solve most problems.

Keywords : Road, Transport, , Innovation.

INTRODUCTION

Transportation is an important economic factor that enables citizens and commodities to flow from region to area. African transport innovations are well known from the use of the historical method. Then we differentiate between three eras: precolonial, colonial and post-colonial. The era of pre-colonialism is defined by low infrastructure growth. During the colonial era, segregated regions were created, cities in which rulers and suburban and rural areas where the majority of the Indian population resided. During this time the majority of transport infrastructures were constructed and the key plan of some countries still follows that developed by colonial masters decades ago. The region where officials were staying and few connected residential areas and farms was largely developed on highways. One of the key factors for the colonisation was the extraction of natural resources, which needed workers and transportation facilities. Trains were designed for the move from mines and farms on mainland to coastal regions, from which cotton, rubber, diamonds, gold etc were exported to Europe¹. Following democracy, several countries agreed to establish a long-term growth agenda, and policy changes emerged. Newly elected or elected governments have agreed to build infrastructure linking all areas of the world and maintaining economic development. Then the preference rail was moved to a second location and the road eventually became the primary means of transport.

STUDY OF ROAD HAULAGE

Taxi bikes Motorcycles are first used as private transportation means, and their number of places is typically small, usually two the most. In Africa's modern history 3, 4, these engines have progressively become a public transport tool. They have numerous titles, names such as bodaboda, benskin, jakarta, etc. They deliver several advantages: low cost investment, low cost of maintenance, affordability of service and versatility. The traveller with decreased baggage is normally taken on by the driver. It is very easy on roads and places which cannot be accessed by vehicle. Their low cost of about US\$600 imported motorcycles from Asia and particularly China. It is regarded as a full-time work in many nations, where the youth unemployment rate is comparatively high. However they do not control or acknowledge their actions by the authorities. Drivers have little experience, and they practise on their own. As a result, they have no stable operation and authorities may at any moment ban or levy a particular fee. They have little protection, and repeated injuries will leave or lead to death. Some see it as a profit and have small businesses with a range of motorcycles. The driver is expected to deliver a set sum per day in this situation. The maximum payback time is two years from our negotiations with certain drivers. The transportation of highways consists of a variety of sub-modes which are identified and evaluated here: walks, animal carriages, taxis, automobiles, buses... In emerging African nations, walking is a normal activity. People travel to their apartments, places of employment, schools, clinics, markets etc. in metropolitan areas. While there are other forms, people choose to cycle. Private and public transit currently co-exist in metropolitan environments. Taxis, motorbikes (imports from Asia) and minibuses, coaches and other transport vehicles are the image of public transport. More than 70 per cent of Africans use their feet for short distances² in mega-cities like Dakar, Abidjan, Lagos, Accra, Cotonou and Douala. The key accessibility means of walking is justified by the population's poor buying power and a low degree of infrastructure growth. A minimum number of requirements must be satisfied for walking. The first shoes should be well suited to foot, path and weather conditions. Secondly, dedicated room should be given. Walking means muscle activity for a walker that contributes to perspiration of the skin. Wandering exposes in certain situations to random factors in the environment, insolation, wind, dust, storm and tornado. Walkers race on the road of metropolitan centres with vehicles. Owing to the limited width of the pavements, residents are obliged to abandon and confront the route for motor vehicles more often. Any places are paved because some dealers use roads to move walkers to restricted areas and bring their life in danger. Crossing highways may be an exercise that is quite challenging. Traffic lights are not popular on most roads and seldom operate due to lack of upkeep or disregard whether they are in decent weather where they are current. Pedestrians place their lives at risk, or waste a lot of time looking for a kind driver to pause and cross. Owing to excessive speed and regular collisions, policymakers think it beneficial to instal 'speed bumps,' which have also neglected to cause vehicles to slow down and instal a bridge to enable passengers to easily cross in certain places. They are not however, often adapted for disabled persons and some of these subterranean bridges become night traps and the residents are stated to have been targeted by armed robbers. In rural regions, spending in infrastructure construction is generally limited. The roads are typically rough, unpaved and are restricted to roads enabling citizens to meet neighbours or family members and travel to farms. This impedes production in these regions, which provide very little resources, and it prevents farmers from exporting agricultural products safely and effectively into markets, thus wasting much of their harvests. Health services are typically far from the village, and residents travel to the closest place, because patients are not quickly and securely transported.

Taxi bikes Motorcycles are first used as private transportation means, and their number of places is typically small, usually two the most. In Africa's modern history 3, 4, these engines have progressively become a public transport tool. They have numerous titles, names such as bodaboda, benskin, jakarta, etc. They deliver several advantages: low cost investment, low cost of maintenance, affordability of service and versatility. The traveller with decreased baggage is normally taken on by the driver. It is very easy on roads and places which cannot be accessed by vehicle. Their low cost of about US\$600 imported motorcycles from Asia and particularly China. It is regarded as a full-time work in many nations, where the youth unemployment rate is comparatively high. However they do not control or acknowledge their actions by the authorities. Drivers have little experience, and they practise on their own. As a result, they have no stable operation and authorities may at any moment ban or levy a particular fee. They have little protection, and repeated injuries will leave or lead to death. Some see it as a profit and have small businesses with a range of motorcycles. The driver is expected to deliver a set sum per day in this situation. The maximum payback time is two years from our negotiations with certain drivers.

Taxi Cabs Five automobiles with a particular colour in African cities comprise of: yellow, grey, combination of yellow and black, etc. The driver can hold one or more passengers in one or more directions depending on countries or cities. Either the government adopts or negotiates with the passenger the expense of a ride. A taxi might have or may travel to a certain location in the capital. Drivers and owners unite in unions for their rights in many nations. You require a licence to pay premiums and other taxes relevant to your company on a daily basis.

Minibuses and busesIn most megacities minibuses have been introduced to the small taxi supply. They are usually situated at the periphery of the town in the common districts. They function at unique destinations and link residential communities with the city centre. They come with different titles: Trotro (Ghana), ndiaga or swift cars (Senegal), Gbaga (Ivory Coast), etc. They have numerous names. Drivers and owners typically have a certain station and are grouped into labour unions. As with taxis, owners receive a licence and pay the required fee. Cars being used as minibuses are shipped from other continents and updated to improve profitability and to expand the number of seats. The car is controlled by two persons, the driver and his assistant. One is travelling and the other is taking charge of passenger boarding. Intra-urban bus transportation in African cities is an activity of more or less practise. Some governments set up transport companies for urban transport: Dakar der dik (senegal), Sotra (Ivory Coast), Stecy (Camera),...In an attempt to organise urban transport. Two guys, the driver and the ticket seller are handling them. The roads are well known but the stops are not often easily identifiable and noticeable. Road charts are rather scarce or not accessible.

Transport machinery profitability

A long-term commercial transport infrastructure must be profitable. In terms of the socio-economic background, the economic parameters must therefore be implemented. It is important to assess well the expenditure and operational costs. Purchase, start-up charges and delivery expenses contained in acquisitions. The running expense covers driver and service wages, benefits, taxation, repairs and costs of gasoline. Inflation of fuels whose market instability is well established must be included in the estimate. Equipment and new parts are also transported in most African countries. Local automotive industry experiences in Africa are very limited. Carbon consumed is also often transported from western countries in several countries, including those processing gasoline. The ticket expense,

along with the capability and frequency of the trips, must also be paid for. The growth of transport firms is rendered challenging by the global context characterised by imports, low productivity and poverty.

Crash and road assistance Vehicles parking in cities such as main roads are frequently detected or vehicles routinely towed by others are seen. Total road collapse and traffic congestion are common. They trigger incidents on the highways. Busses also disarray travellers who waste hours on a path in order to locate a potential answer. This triggers time and cash loss. On a trip we can do two hours we invest every day. We're expected to do that. The rescue motorists might aid with a traffic control device or a garage monitoring system. Insurers should take into account support, but it is seldom incorporated into the goods sold and drivers require their friendships or cooperation with their communities for a remedy.

Maintenance, layout, parking and track Three route forms are usually followed: asphalt highways, paved roads and pathways. In contrast, paved roads may be divided into two-way, multi-way and highway types. Owing to their lower prohibitive prices, two-way asphalt roads with small widths prevail. The urbanisation witnessed in recent years was followed by mobility problems as road congestion and traffic stagnation caused significant losses. New methods must be created or established forms must be extended or transport simply reorganised at times. In certain towns, as in Algiers or Tunis, the authorities also implemented the tram. Track repair is however a real concern. Roads also stay unmaintained and contain wetlands, sewage ponds, broken signalling structures, failed signage, etc. If the infrastructure is finally unprofitable, repair failures can be expensive to the community⁶. In order to prevent collisions, improperly built speed bumps are mounted, reducing traffic dramatically and growing air pollution. Car parking is a severe issue in African towns. Car space is not typically well limited unless there is a constant rise in the number of vehicles. As a result, drivers have to abandon their cars on the road or on the pavement at most or may waste a lot of time searching for a car park. Therefore the approach to implement this dilemma will be acceptable.

The current state's insurance scheme provides minimum security and assistance for passengers and vehicle owners after a crash. A lease, including the identity certificate and driver's permit, is compulsory for all cars. Insurance providers provide various insurance levels: liabilities, fraud, broken glass, security for passengers, etc. The prices differ due to the level demanded by the client, the greater the value of the deal is insured. However many cars are circulated without protection in the sense of pervasive hardship or owners choose to provide limited coverage. Mistakes on the position of insurance persist, on the other side. The insurance provider promises that the consumer can be saved should a disaster happens when the deal is signed. However, distrust between the two sides typically remains. The prosecution period will be lengthy, deterring consumers who prefer an agreement in the event of an injury, given that it is practicable. The provided goods are always ineffective. For example, there is not adequate technological assistance to certain organisations because certain goods exclusively cater to automobiles beyond the age of five, while fleets span twenty years and vehicles past the average age of five are irrelevant.

Vehicle life The motorised transport in Africa is focused largely on automobiles transported from other continents. In the past, only automobile purchases carried out by Europeans have been made relevant for the diaspora since the imperial era and cars with all trademarks have filled African sea ports. In a range of countries such as Nigeria, Senegal, South Africa and Morocco, assembly plants operate, but rivalry is fierce. There are also

very few encounters from African producers. Just the age that differs from one nation to another is the only restrictions put on manufactured automobiles. For example, in Senegal, the five-year age limit in 2012 increased to 8. Vehicles are not regulated for efficiency: emissions, brake device, engine quality, etc. Lifespan is endless and highways already hold cars nearly 40 years old in bad form. In Senegal, for example, the average age of the automobile fleet is 20. The dilemma of reliability, protection and air quality is posed by an obsolete scenario.

A diverse collection of problems that require progress in all aspects of the economy in order to meet the needs of the present generation without sacrificing long-term needs of the next generation be answered by sustainable economic growth or poverty reduction. Transport is one of the main fields in which the aims of eradicating poverty and sustainable growth have an important role. The transport industry is rather integrated and affects trends in other economic sectors. In reality, it has an effect on the achievement of all 8 MDGs. Road transport, which accounts for 80% of traffic and 90% on mainland tourists, is the primary form of motorised transport in Africa. In 2001 there are approximately 2.06 million km of roads in all of Africa, resulting in 6.84 km per 100 km². road density. With the average route-to-population ratio of 26 km per 10,000 population in the continent, a strong sub-regional fluctuation occurs. With 49,5kilometres and 56,3 kilometres for each 10,000 people, Central and Southern Africa have the largest distribution of highways. The entire African road network was paved with just 580,066 kilometres in 2005 or 22,7 per cent. The costs associated with transportation are large in most African countries. Africa's shipping and protection rate for the entry to international markets averages 30 per cent of its overall export volume, which in all developed countries corresponds unfavourably to 8.6 per cent. While several of these countries share the question of high transport costs, landlocked countries face the continent's most disproportionate transport costs. Road incidents across the world are destroying 1.2 million residents. Over 225,000 of this figure, or 19%, were killed on African roads. In comparison, Africa has the largest per capita rate of traffic deaths. In 2005, the mainland had an overall rail network of 90,320 kilometres every thousand kilometres, most of them split. In Africa, trains normally have a low amount of traffic with the exception of North Africa. Railways hold just 1% of the world's freight railways and 2% of commodities. Eight. The most dominant form of freight transport to and from Africa is marine transport. More than 92% of African international exchange is paid for. Africa has 90 large harbours and many other ports with a gross coastline of 30.725 km offering fishing and tourism facilities. African ports manage 6% global trade, with approximately 6 ports each managing approximately 50% of container traffic in Africa. Africa is in Egypt and South Africa. Africa has a range of rivers and lakes with a strong capacity for freshwater waterways that are cost-effective, electricity productive and environmentally sustainable. 29 African nations have navigable water sources, however only a limited number of good facilities have been established.

In 2007 the continent had more than 4,000 airports, of which about 20% had paved roads. While the number of airports and airports in the area tends to be immense, a substantial number struggle to follow the requirements and recommended activities of the International Civil Aviation Organisation (ICAO). Just 117 airports in Africa are globally listed. At about 5.2% of airline traffic, about 3.6% of freight and around 8.5% of departures for 2006, the share of global air transport is still poor. Transit times on transport routes in Africa are excessively long due to reasons such as vague and often inconsistent laws, unreliable service suppliers, road blockages and customs and administrative burdensome procedures. This faced a big obstacle to promote transport and commerce in the mainland. Which creates unnecessary disruptions in flow, which contributes to

significant costs of transport. Around 25 per cent of the world's electricity consumption is compensated for by the industrial transport industry and more than 55 per cent of the whole oil consumed annually. 95 percent of its energy demand is dependent on petroleum products. Fifteen. Road transport accounts for around 85 percent of overall transport energy use in developing countries and the rail, shared maritime and aeronautical balance of energy consumption in the transport market. Ageing and unreliable vehicles may attribute the high energy strength of road transport in Africa. In order to eliminate poverty and achieve sustained growth, African energy needs will continue to increase with the growing demand for mobility. This rise would entail an improvement in energy use, primarily oil products and modern alternatives. The effect on the climate and human wellbeing of transport is strongly negative. These impacts are related to road building and transportation services provision. Air contamination, city and port congestion, land degradation and loss of fauna and flora are all the issues of travel. About 20% of global greenhouse emissions was transportation. The industry has become the fastest rising cause of greenhouse pollution on the continent, due to the rapid - motorised transport in Africa.

In the transport field, environmental issues are important: loss of forests and other vegetation, including wildlife habitats, depletion, in particular by soil erosion on land adjacent to infrastructure, and changes in drainage structures and geological development in connection with building highways, highways, airports and marina. Policies, policies and initiatives on transport: Sub-regional, regional and foreign agencies, and Ministerial Conferences and Heads of State Summits have adopted resolutions with a view to speeding up construction of an integrated African transport infrastructure. Rural transport improvement: SSATP's empirical study was performed for the 2004-2007 span to provide methodologies for the evaluation of rural transport facilities. At the same period an analysis was conducted of the gains achieved in facilitating the intermediate means of travel (IMT) and in the appraisal of the achievements and bottlenecks introduced by several African nations, the World Bank and bilateral donors, in implementing the Rural Travel and Transport Programmes (RTTP). The results demonstrated the weak condition and absence of the legislative mechanisms and administrative systems of motorised rural transportation services. They suggested the need to fix aspects of rural transport legislative, structural, and funding which limit the provision of affordable transport to the poor. To resolve the problem of the information deficit, teaching content was created and the first form of training was completed in 2007 on the management of rural transport. Facilitating travel, protection and protection: many regional and bilateral agreements and guidelines have been concluded in Africa aimed at simplifying and harmonising the exchange and transport between Nations. Inter-state agreements and guidelines, several of which are applied, were introduced in Northern, East, Southern and Western Africa. Transport of different commodities by sea, multi-modal transport, control of hazardous goods transport, codes of highways and civil aviation, maritime cooperation, insurance of common cars, common border stations and systems for the management of transport corridors.

Security and safety of transportation is a big field of concern in Africa. With appreciation for the major health threats and economic costs of inadequate road protection, the SSATP has collaborated with the African governments to devise and enforce sound transport policies aimed at enhancing road safety, among other items. Environmentally sound travel quality and capacity efficiency: Bus Rapid Transit (BRT) has recently been introduced to Africa's transport grid to achieve better energy efficiency in the transit industry. The BRT simulates a mass traffic scheme utilising exclusive transport lanes in conjunction with the most popular metro structures in the developing world except using bus instead of rail technology. In recent years, the BRT has been launched, or is planning, by Cairo, Lagos,

Johannesburg, Dar es Salaam, Dakar and Kampala. In the face of growing alarm about the environmental effects of pollution from motorised transport types, efforts to combat sustainable transport in Africa are also being implemented by, among other interventions, encouraging non-motorized transport.

Future challenges of transport system

Despite Africa's attempts to devise and execute action, strategy, policies and programmes to build an appropriate, secure, safe and cost effective transportation infrastructure that fosters efforts to alleviate poverty and to achieve sustainable growth, there remains a wide gap between the goals expected and the degree of accomplishment. The amount of difficulties and restrictions confronting the region in the construction of sustainable transportation systems can be related to this. The below are the biggest obstacles and limitations.

Inappropriate policies of national, subregional and regional agreements and limited enforcement of them the absence of appropriate and well-formulated policies and strategies as well as the sluggish execution of subregional and regional agreements continue to pose significant obstacles to the growth of African sustainable transport. Many African countries lack policies which permit and encourage involvement by the private sector in the creation and operation of transport infrastructure. Train, air and marine liberalisation and privatisation are all in their early stages. Efforts to harmonise the laws and regulations related to the transfrontier movement of products, resources and individuals are not yet successful as the agreements aimed at allowing the cross-border transport of goods and passengers by road and rail or the long overdue, long-standing Yamoussoukro decision on air transport have not been completely enforced by several African countries.

Narrow transportation network connectivity and low network status: transport networks are distinguished in several African countries by the absence of many connections between each nation and countries that cause a large per cent of rural people to remain untouched by market access and key economic and social services. In combination with the issue of missing road, train, inland waterway and air transport connections, most of the current infrastructure is old and weak.

Inadequate capacity for citizens and institutions: although the amount of staff in public transport companies and organisations in Africa is comparatively large, in most carriers there is restricted supply of trained employees. There are also a shortage of adequate expertise and technological capability for formulating, preparing and maintaining infrastructure growth and facilities and for controlling, regulating and implementing policies and regulations, and a lack of professional human capital.

Negative environmental consequences of transport are associated with major adverse environmental changes, in view of the vital role of the transport sector in sustainable growth and elimination of poverty. The most important environmental issues commonly related to road, train, airport and seaport development are the loss of forests and other ecosystems, including: habitats for wildlife; land deterioration by soil erosion, especially in land adjacent to infrastructure; and changes in drainage systems and geological formation.

Poor care and safety in the transportation sector: a major problem in Africa remains the prevalent bad condition of transport safety, after injuries, the loss of life and the damage of property have become unbearable. The absence of leading agencies in some countries

responsible for road protection is an essential deficiency in this sector. Combined with that, it seems that the traffic laws are not being consistently implemented. In certain situations, a shortage of sufficient financial capital represents the biggest limitation common to all shortcomings in road safety management. Another field of big concern in Africa is the weak safety record of many African airlines.

Restricted funding: While African policymakers are making efforts to leverage financial capital for transport infrastructure investment and the sustaining of established infrastructures, enormous disparities remain between demand and accessible resources, together with their foreign and national development partners. In order to construct infrastructures and have energy-efficient, environment-friendly transportation vehicles, the sustainable construction of transport needs big financial investment.

In order to achieve sustainable development in Africa, transport networks and facilities are key. Efficient accessibility and timely access to products and services involve an integrated transportation and services network that is reliable, stable and accessible. However, also in other developing countries in Asia and across the world the African transport infrastructure has not been established yet.

The African countries ought to show their contribution to developing their domestic investment climate by taking realistic steps in the following areas: National strategies and sub-regional and regional agreements:

- (a) Complete liberalisation of transport to draw investment from the private sector;
- (b) Improving frameworks to control and implement the development of equal areas of expenditure and resources in infrastructure;
- (c) Strengthened coordination of federal and subregional transport facilitation and air transport liberalisation agreements in establishing and enforcing them.

Human and administrative capability building: The development of a secure safe, sustainable and environmentally sound transport scheme requires the establishment of effective organisations with suitable mandates and highly driven and competent human capital. The following steps must be taken in the field of capacity-building to improve the environment for developing or extending transport networks and services. (a) Ensuring that the required structural framings and distinct regulatory and organisational roles for all transport modes are developed. Strengthen current institutions that would facilitate the growth of sustainable transport that are responsible for the preparation, enforcement, and execution of the activities.

Transport and environment management: The production of sustainable transport that adequately addresses African countries' mobility and connectivity needs and reduces the emissions of greenhouses has been demonstrated to be feasible, though restricted, in Africa.

While Africa is not planned, it is a clear illustration of the environmental benefits of low motorised transport. The African exposure to global greenhouse gas emissions, and related climate change effects, air contamination, land use for the networks of transportation, as well as the effect on fauna and flora is poor because of Africa's low motorised modes of transport relative to other regions worldwide. While the continent currently is not among the major polluters, it would not only slowdown its own growth, but also play a crucial role

in the global problem of climate change if it proceeds on the regular business route. In other countries that have responded to global change, Africa should take lessons by following the direction that has been taken in creating a transport infrastructure focused on fossil fueled fuels. The continent has a rare advantage in creating low emission and environmentally friendly transport networks owing to the embryonic stage of the transport sector in Africa.

Transport networks in Africa have high costs, which have to do with a diverse collection of reasons like weak facilities, ageing and unreliable fleets, poor facilitation of transport, and low competitiveness and transport on some roads. Transport prices in Africa transport are large. Transport services are correlated with high costs. The reality that products and services are accessible near to customers eliminates the need for travelers to be carried over long distances. Land use development may play a major role in this regard by limiting urban sprawl, for example, which includes the creation of settlement models advocating for lower energy efficient forms of transport such as taxi and private car proliferation.

Transport safety and security: loss of lives and property in all transport modes in Africa, but particularly in road transport, caused by traffic accidents has taken on alarming proportions. SSA TP also helped improve understanding of the effect of road injuries on life and the economy in Africa under the auspices of the Road Safety Initiative. In order to strengthen the protection of all forms of transport, African countries must expand on those initiatives by action:

- a) Build and reinforce current structural structure for traffic control and safety;
- b) The distribution of appropriate resources for safety programmes, in accordance with a Commission demand for global road safety, to reserve for safety-related programmes not less than 10 percent of the overall road infrastructure investment;
- c) Ensure that protection and protection laws and requirements are followed in all modes of transport by the applicable foreign and regional authorities;
- d) To approach maritime security concerns in a comprehensive manner, particularly in relation to the recent increase of maritime piracy, including a detailed analysis of the root causes of piracy.

OBJECTIVES OF THE STUDY

- To study on Strengthen the climate for facilities and utilities for developing and expanding travel.
- To study on Strengthened cooperation in the production and execution of regional and sub-regional transport and liberalization agreements.

CONCLUSION

Transport management is crucial to ensuring balanced economic growth and poverty elimination, thereby contributing to sustainable development in Africa. Transport management is a key field. The transport sector must be established in an organized and co-ordinate way in order to perform its legitimate position, in order to bring about a secure,

effective, healthy and eco-friendly passenger and goods infrastructure. In African economies, road transport plays an important function. Human and financial services are always scarce and restrict States' preference by selecting transport modes. In most nations, road transport thus remains prevalent. The subsectors of roads are classified into many categories by equipment type: bicycles, horsemanship, motorcycles and automobiles, public and private, after their use. They each have a way of working and coordinating themselves. The big infrastructure is the path that must be built to accommodate all users because of the multiplicity of the players interacting on the road. This uncertainty is however not often taken into consideration and the road business is usually anarchic, which costs the African countries' economies a great deal. The quest for solutions should be focused entirely on the meaning of creativity of the different players who need to invent new rules which correspond to territorial realities.

REFERENCES

1. R. Pourtier, *Revue belge de géographie* 2, 14 (2007).
2. Faye P.E., *Procedia-Social and Behavioral Sciences* 43, 43 (2012).
3. Hemchi H.M., in in *Proc. of CODATU*, 2-5 February, Istanbul-Turkey, (2015).
4. Kassi-Djodjo I., *Géotrans* 1-2, 105 (2013).
5. Godard X., *Research in Transportation Economics* 40, 96 (2013).
6. Pojani D. and Stead D., *Sustainability* 7, 7784 (2015).
7. Sternberg, H., Germann, T. and Klaas-Wissing, T. (2013) Who controls the fleet? Initial insights into road freight transport planning and control from an industrial network perspective. *International Journal of Logistics: Research and Applications*, 16 (6), 493-505.
8. Wynstra, F., Spring, M. and Schoenherr, T. (2015) Service triads: A research agenda for buyer–supplier–customer triads in business services, *Journal of Operations Management*, 35, 1-20.
9. Yáñez-Arenas, A. (2013) Dynamic triads: service innovation within a supply network. PhD thesis, University of Glasgow, Scotland. <http://theses.gla.ac.uk/4751/1/2013yanezphd.pdf>
10. Yin, R. K. (2014), *Case Study Research. Design and Methods*, 5th edition, Sage, London, UK