

KEY PERFORMANCE INDICATORS AND PERFORMANCE OF THE ROAD TRANSPORT COMPANIES IN RWANDA.

Author: CLEMENT HABIMANA SH

University of Lay Adventists of Kigali

Corresponding author : habimanaclement44@gmail.com

Abstract

The purpose of this paper aimed at identifying the KPIs which can guide improvement in the road passenger transport companies, the ways in which information is availed to passengers, ways in which companies measure employees' performance and *level of profitability*. The findings of the study found that various KPIs are used by the different passenger road transport companies and were categorized into indicators for overall business performance, vehicle performance, operational costs, employee performance and how companies measure overall profit. About ways in which information is availed to passengers, the findings revealed that there are a variety of ways through which information is availed to the public including bus stops, company internet, transit shops, and notice boards at the company office premises and on-board the buses among others. Companies measure their employees' performance using performance contracts in relation to set targets, Input - output ratios were other ways in which companies measure the performance of their companies, include: time, vehicles, labor (human resources) and finances while outputs include: services, wastes, income collections, while individual's contribution is measured to assess how much each one plays in the achievement of the overall company performance. The most reported measure of road transport company profitability was gross profit and net profit, profitability ratios, total costs and losses, analysis of cash flows and production efficiency and effectiveness

Key words: Performance, Performance Indicators, Improvement

Introduction

Performance indicators are a numerical measure of the degree to which an objective is being achieved. Performance indicators, by definition, are not exact measures of performance but “indicate” the level of performance regarding the overall objectives agreed upon. They are practical attempts to improve the quality and consistency of performance measurement by focusing on key synthesis indicators. A commonly used “tip” to build-up effective performance indicators is to make sure that they are “SMART”, i.e. Specific, Measurable, Achievable, Result-oriented and Time-based. It might be useful also to ensure that performance indicators are not “DUMB”, i.e. Dangerous, Unethical, Malleable and Biased (OECD, 2008).

Badly chosen performance indicators might bias the incentive structures and consequently have serious perverse effects or unintended consequences. This will be the case when the performance indicators encourage behaviours improving the indicator itself but deteriorating the performance of the SOE *vis-à-vis* chosen objectives. Dysfunctional behaviours include, *inter alia*, gaming,

misinterpretation, myopia, narrow focus, etc (OECD, 2008).

Finally, performance indicators must be taken and used for what they are, i.e. a snapshot of performance in time. They do not provide a guide to future performance nor do they explain why a target has been achieved”. In reviewing State of Environment (SOE) performance, shareholder entities should thus also consider other sources of formal or informal information. They should seek feedback from the entities concerned in order to obtain a broader picture and a better understanding of the current situation and of actions to be taken to improve future performance (OECD, 2008; UK Department for Transport, 2010).

The UK Department for Transport (2010) notes that the starting point for any performance improvement programmed should be to understand the current performance of the company’s/organization’s operation. This means collecting data on key aspects of your operation, and turning this information into specific measures that can help in identifying areas for improvement. For instance, how much it costs to deliver products to customers, how many miles the vehicles run empty or the number of late

deliveries registered in a given period. These measures are known as key performance indicators, or KPIs. A KPI on its own will not tell much. Individual measures and data need to be turned into information that can help in decision making. This means setting a target, and measuring and monitoring KPIs over a period of time to see how performance meets the targets. Weekly, monthly and annual reports allow monitoring progress and seeing which areas need the greatest improvement. Producing graphs or charts will often be the best way of showing performance progress.

However, UK Department for Transport (2010) notes that there are a number of things that can be considered before hand in order to decide which ones may be right for the entity. A KPI should be relevant and it should also be SMART - Specific, Measurable, Achievable, Realistic and Timed.

Specifically, KPIs should be specific, simple to use and easy to understand. Complicated statistics and formulae can lead to confusion and uncertainty about what is actually being measured in the first place. If KPIs are specific and kept simple, they can be easily communicated across the business and there is no need for staff to

have an in-depth knowledge of the area being measured (OECD, 1997)

Measurable: KPIs can show changes in performance over time. For this to happen it is essential to compare like-with-like data (UK Department for Transport, 2010). It is easy to fall into the trap of comparing two drivers on different routes for time utilization or miles per gallon (MPG). If one route is more demanding than the other, this could be misleading. Similarly, comparing drivers when they drive vehicles of substantially different age or vehicle type can also be deceptive. There are ways to address these problems however, such as rotating drivers onto different vehicles and different routes and then monitoring both driver and vehicle performance, to spot consistently high and poor performers (UK Department for Transport, 2010).

Achievable: Any targets that are set should be achievable. It may seem beneficial to set high targets in the hope that this leads to greater improvements in performance, but people can become disillusioned when they continually fall short of the targets set for them (UK Department for Transport, 2010). Regularly reviewing performance towards targets and then resetting the targets to encourage smaller incremental (but cumulative) improvements may work much better in the long run.

Realistic: Remember that decisions and management actions will be taken as a result of the data collected and presented, so the data collection method needs to be realistic, reliable and consistent. It is important that the data required to produce the particular KPI can be collected easily and on a regular basis, as comparison over time forms the basis of benchmarking and then improving performance (UK Department for Transport, 2010).

Timed: The frequency of monitoring is an important consideration. Weekly or monthly monitoring is recommended for many KPIs but this can depend on the measure and the needs of a particular business (UK Department for Transport, 2010). Some information may have to be collected on a daily basis, such as staff absences in the warehouse, daily delivery drops or nightly trucking volume. If certain measures are not recorded and presented to the agreed timescales, the risk of changes in performance going unnoticed rises.

Which KPI is Right for Me? To understand the KPIs that are right for a company or organization, it is important to consider several factors such as the entity's size, type and management (OECD, 2008). The size, type and management structure of a company is likely to influence the range and type of KPIs you might use. KPIs can be

used to help managers develop strategy, plan and make decisions, while at the operational level they can show clearly the areas that need improvement, or a change in approach.

An individual KPI can tell how well the company or organization is performing at an operational level. However, when looked at in combination with other measures, a picture can be provided of how you are performing in terms of revenue and profitability and overall fleet efficiency, and in relation to customer service and legal obligations (UK Department for Transport, 2010).

Problem statement

Rwanda is a landlocked country in the heart of Africa and far from the maritime ports on the Indian Ocean, with the distance to the nearest port of Dar es Salaam being around one thousand four hundred kilometers (1,400 km). This poses a major limitation in its national development efforts (Rwanda Transport Development Agency, 2012). The current state of transport infrastructure in Rwanda may be attributed to the genocide of 1994 against the Tutsi, which destroyed the economic infrastructure of the country considerably. This situation is aggravated by other institutional problems, such as the absence of key performance indicators for the performance of the sector,

institutional weaknesses in the performance, as well as the absence of a strategy for maintenance of transport infrastructure (Rwanda Utilities Regulatory Authority, 2013). There is a lack of diversification of the means and modes of enhancement of the performance in the road transportation. The lack of passenger satisfaction, reliability, vehicle utilization, revenue collections, safety of passengers, drivers, lack of practical applications of accessibility analysis in transport appraisal methodologies is mainly due to concerns about double counting of effects (Geurs & van Eck, 2001), the perceived complexity of their formulations and their resulting difficulty of interpretation (Geurs & Ritsema van Eck, 2003). Each of the formulations of accessibility is particularly suited to address a certain transport planning problem and the selection of the appropriate indicators for a particular case is a complex task (UK Road Safety Authority, 2009). Studies done in Rwanda (MININFRA, 2008; 2012) have dwelt on the performance of the government owned passenger road Transport Company and no studies exist on how the key performance indicators can improve the performance of road transport companies in Rwanda (Niyonsenga, 2012). This study therefore was undertaken on the key performance

indicators that can improve the performance in the road transport companies.

Method

The study was conducted based on descriptive design where quantitative and qualitative approaches are involved. According to Williams et al (1990), study population is the totality of persons and objects with which a study is concerned. The target population was 600 made by private (350) and public (250) transport companies. For this study, a sample size of 334 respondents was chosen; stratified sampling technique and simple random sampling were conducted during the data collection that cut across the public and private companies. Self administered questionnaires were used to enable the respondents to have adequate time to respond to the same set of questions in a predetermined order. A 5-point Likert scale ranging from 1-5 where 1(strongly disagree), 2(disagree), 3(Not sure), 4(agree), 5(strongly agree) was used to gather data from three transport companies of RITCO, KBS, and Horizon

From KBS and Horizon transport companies, 186 respondents were selected from the 350 total employees of KBS (211) and Horizon (139) transport companies. Of the 186 respondents from KBS and Horizon, 180 respondents were selected

using systematic sampling while six (6) respondents were selected purposively. To select 180 respondents, a list of 211 from KBS, 139 from Horizon and 250 from RITCO were obtained from these companies. For each of these company lists,

every 2nd person was selected and considered for the study (See Table 1.1).

Table 1.1: Sample size selection

Category of respondents	Public Transport Company	Private Transport Companies		Total
	RITCO	Horizon	KBS	
Management	8	3	3	14
Drivers	46	30	41	117
Conductors	51	25	33	109
Mechanics	33	11	16	60
Supervisors	10	10	14	34
<i>Sub Total</i>	<i>148</i>	<i>79</i>	<i>107</i>	<i>334</i>

Source: Field data 2013

Questionnaire administration was used as a method of obtaining information on the road transport companies' key performance indicators in Rwanda. In-depth interviews were held with the key informants; managers, supervisors, directors of both private and public road transport companies using an interview guide. In-depth interviews were conducted using an interview guide as the tool in data collection on the performance (in terms of profitability, efficiency, effectiveness, input-output ratios et c) of the road

transport companies. The key informants were interviewed because they are believed to possess deeper information about the key performance indicators of road transport companies. The method was used because it enabled the recording of opinions, and feelings of respondents regarding the studied phenomena (Yin, 2003). Secondary data were gathered using documentary review. The sources of these documents were both online sources especially Google, Google scholar, and physical reports accessed at Ministry of Infrastructure,

Rwanda Transport Development Agency (RTDA), KBS, HORIZON and RITCO companies, National University of Rwanda, University of Lay Adventist of Kigali and the documents included: dissertations, journal articles, transport companies' managerial strategy manuals, transport planning manuals, evaluation and

performance reports, public transport policy and strategy for Rwanda

Findings

Identify the KPIs which can guide improvement in the road passenger transport companies

Table 1.2: Key performance indicators

Key Performance indicators	Public		Private		Clients	
	Frequency	%	Frequency	%	Frequency	%
Passenger satisfaction	29	20	26	14	34	17
Level of customer information	16	11	24	13	31	15
Reliability	18	12	27	15	18	9
Cost of providing transport services	19	13	29	16	23	11
Safety of passengers and drivers and conductors	23	16	16	9	20	10
Size of the market share	13	9	0	0	9	4
Transport fares relative to distance travelled	0	0	16	9	22	11
Vehicle utilization	17	11	15	8	7	3
Revenue collections	13	9	33	18	27	13
I do not know	0	0	0	0	14	7
Total	148	100	186	100	205	100

Source: Field data 2013

Passenger satisfaction is one of the KPI that was found to be used by the road transport companies in measuring

improvement in the management systems in the road transport companies as revealed by 29 (20%) of the respondents belonging to

the public transport companies, 26 (14%) of the private transport companies respondents and 34 (17%) of the clients. The above results are supported by a study done by Felleson and Margareta (2008) found that attributes like reliability, frequency, comfort, information, driver behaviour, and cleanliness are key elements of public transport user satisfaction. Level of customer information as another KPI was reported by 16 (11%) of the respondents from the public transport companies, 24 (13%) from the private transport companies and 31 (15%) of the clients. Reliability as another KPI reported by 18 (12%) of the respondents belonging to the public transport companies, 27 (15%) from the private transport companies respondents and 18 (9%) of the clients. Transport fares charged by the transport companies relative to the distance involved and the cost offered by other transport companies serves an important indicator of efficiency of the road transport company reported by 16 (9%) of the private transport companies respondents and 22 (11%) of the clients. Safety was another KPI employed by the road passenger transport companies in Rwanda

as reported by 23 (16%) of the respondents from the public transport companies, 16 (9%) of the respondents from the private transport companies and 20 (10%) of the respondents belonging to the category of clients. Accessibility and convenience were only reported by 13 (9%) of the public transport company respondents and 9 (4%) of the clients, Vehicle utilization was also revealed by 19% of the respondents as an indicator of an efficient transport service. The amount of revenue collected by the company on daily, monthly and annual basis is another KPI as reported by 13 (9%) of the respondents from the public transport companies, 33 (18%) from the private transport companies and 27 (13%) of the clients.

Ways in which information is availed to passengers

The ways in which information (which information – bus schedules, fares, routes etc) is availed to customers were determined from the 539 respondents that were studied and the results are presented in Figure 1.3.

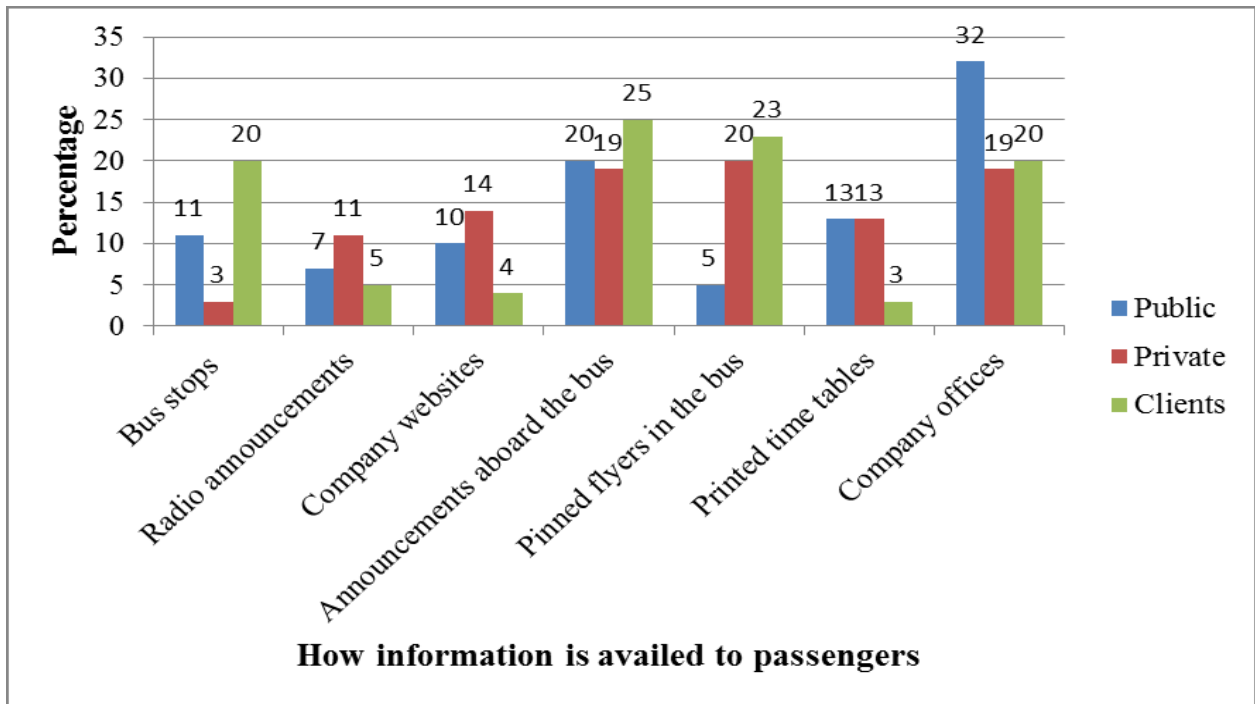


Table 1.3: Ways in which information is availed to passengers

The findings revealed that there are a variety of ways through which information is availed to the public. Among them are: bus stops, company internet, transit shops, and notice boards at the company office premises and on-board the buses among others.

On-board the bus: This was the commonly used method of availing information to passengers as revealed by 30 (16%) of the public transport respondents, 36 (14%) of the private transport companies respondents and 51 (25%) of the passengers

Pinned flyers in the buses: This service was reported to be common among all the bus transport companies in Rwanda revealed by 8 (5%) of the respondents from the public transport companies, 37 (20%) from private transport companies and 47 (23%) from the clients.

Company websites: The findings showed that both private and public transport companies availed information to passengers via the websites revealed by 15 (10%) of the public transport companies respondents, 26 (14%) of the private transport respondents and 8 (4%) of the clients

Bus stops: The study revealed that the all the bus companies availed information via

bus stops as reported by 17 (11%) of the public companies respondents, 5 (3%) from the private transport companies and 42 (20%) of the clients

Printed time tables: The use of printed time tables was reported by 19 (13%) of the respondents from public transport companies, 25 (13%) from the private transport companies and 6 (3%) of the clients

Radio announcements: Announcements are run on the radios informing passengers of disruptions in the bus operations and as a result passengers are able to make informed decisions regarding their travel plans. Announcements as ways of availing information to passengers were reported by 11 (7%) of the public transport companies respondents, 21 (11%) of the respondents from the private transport companies and 11 (5%) of the clients

Ways in which companies measure employees’ performance

The ways in which companies measure employees and company performance was asked studied and the results are presented in Figure 1.4.

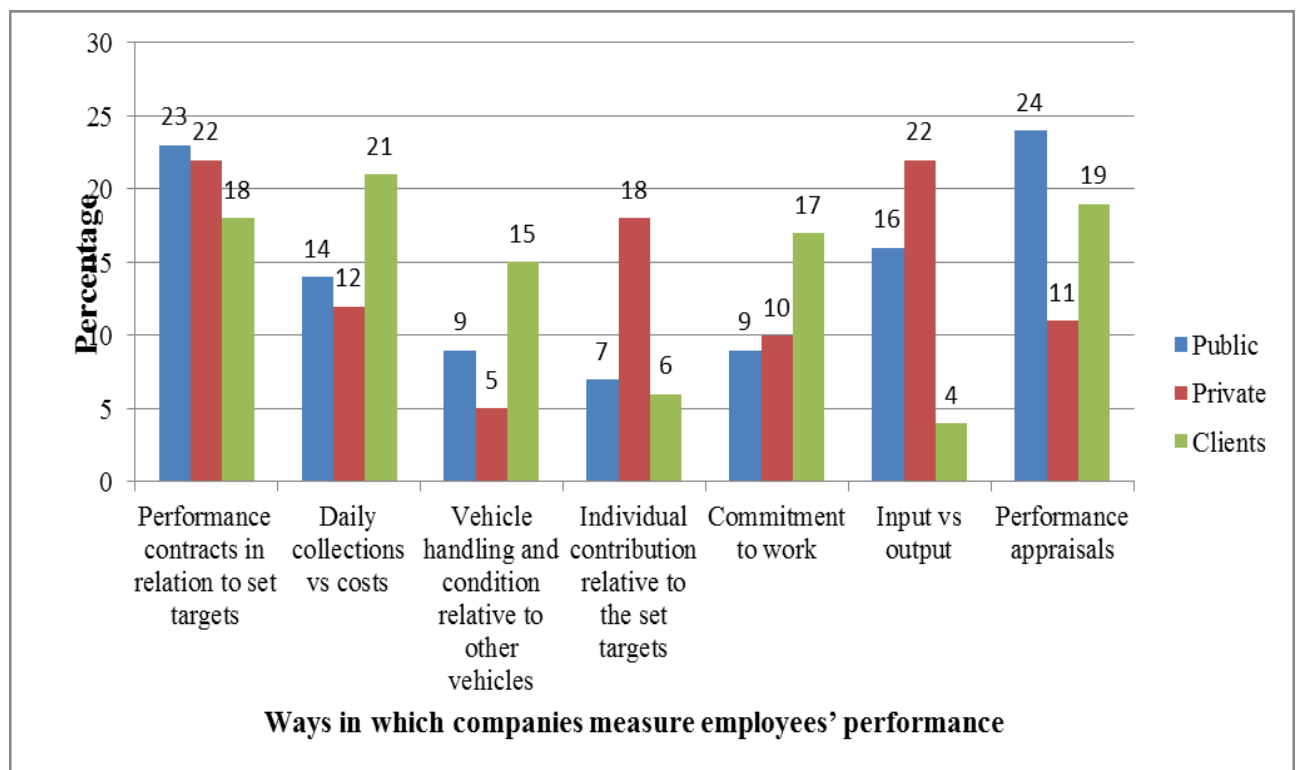


Table 1.4: Ways in which companies measure employees' performance

The findings revealed that of the 539 respondents the majority who were 34 (23%) from public transport companies, 40 (22%) from private transport companies and 36 (18%) of the clients revealed that the road transport companies measure their employees' performance using performance contracts in relation to set targets

Input - output ratios were other ways in which companies measure the performance of their companies as revealed by 23 (16%) of the respondents from the public transport companies, 41 (22%) from the private transport companies and 9 (4%) of the clients

Individual contribution relative to the set targets was revealed by 10 (7%) from the public transport companies, 34 (18%) from

the private transport companies and 12 (6%) of the clients as another way in which companies measure their performance

Daily collections vs costs were revealed by 20 (14%) from the public transport companies, 23 (12%) from the private transport companies and 44 (21%) of the clients. A study conducted by Levinson et al. (1998) revealed that bus performances differ from bus to bus. Another way in which companies measure employees' performance was by assessing company vehicle handling and condition relative to other vehicles as revealed by 13 (9%) of the public transport companies respondents, 10 (5%) of the private transport companies respondents and 31 (15%) of the clients. Commitment to work was reported by 13 (9%) from the public transport companies, 18 (10%) from the private transport companies and 34 (17%) of the clients as a way of measuring employees' performance

Ways in which companies measure level of profitability

There was a mix of ways in which companies measure the levels of profitability and these are presented in the Table 1.5.

Table 1.5: Ways in which companies measure level of profitability

Measures of profitability	Public		Private	
	Frequency	Percentage	Frequency	Percentage
Gross profit vs net profit	41	28	44	24
Total costs	30	20	36	19
Business growth and development over time	19	13	21	11
Profitability ratios	10	7	13	7
Analysis of Cash Flows	13	9	12	6
Production efficiency and effectiveness	19	13	27	15
Total losses	16	11	33	18
Total	148	100	186	100

Source: Field data 2013

The most reported measure of road transport company profitability was gross profit vs net profit as revealed by 41 (28%) of the respondents from public transport companies and 44 (24%) of the private transport companies. The second most reported measure of the company profitability as revealed by 30 (13%) of the respondents from the public transport companies and 36 (19%) of the private transport companies was total costs. Total losses were also reported as another way in

which companies measure their profitability as revealed by 16 (11%) of the respondents from the public transport companies and 33 (18%) from the private transport companies. Analysis of cash flows was reported by 13 (9%) of the respondents from the public transport companies and 12 (6%) from the private transport companies as another way in which companies measure profitability of road transport companies. Production efficiency and effectiveness also measures the company's profitability as

revealed by 19 (13%) of the respondents from the public transport companies and 27 (15%) from the private transport companies. Profitability ratios were another way by which companies measure their profitability as reported by the least number of respondents 10 (7%) from the public transport companies and 13 (7%) from the private transport companies who were largely accountants, cashiers and other employees with a background in business administration

Conclusion and recommendations

As objective was to identify the key performance indicators that can guide the improvement in performance of the road transport companies in Rwanda. Passenger satisfaction was the commonly used KPI to guide improvement in the performance of the road transport companies in Rwanda. Passenger satisfaction is considered the heart of the transport business and all efforts were therefore made to ensure customer satisfaction. Obtaining passenger satisfaction data through periodic passenger surveys should be an integral part of the companies. Therefore, companies' passenger satisfaction determines the royalty of passengers which is associated with revenue collections by the transport companies. A trend analysis can be conducted of these routes by comparing the

collections per route and trip schedules to determine the routes that are viable and the trips which are viable and the causes of variations in collections for management decision making. Based on this information, management decisions can be made for the best performance of the companies. Although revenue collection by the transport companies was used, it was largely more helpful in the private transport companies as opposed to the public transport companies. Public transport companies were found to operate on routes that are not profitable since one of their mandates is to provide passenger services on certain routes regardless of whether the routes are profitable or not. Revenue collections by the transport companies was another KPI that was considered vital in improving the performance of the road transport companies in Rwanda. According to the respondents, daily, weekly, monthly and annual revenue collections are very important indicators that guide improvement in the performance of the companies. Cost of providing the transport services was also an important KPI in the operations of the road transport services. This is implemented by analyzing the costs involved in providing passenger transport services on different routes operated by the companies. Assessment of the costs is made based on the revenues generated and the

potential of the route for increased numbers of passengers. Using this indicator the present and future performance of the company is computed and estimated. It was however found that the public transport companies did not consider this indicator on certain routes due to its mandate of providing transport services in at below the market rates in areas which are not served by private transport companies. This has kept the company's costs high compared to its revenue base thereby breeding inefficiency in service delivery. Safety of the passengers and company staffs was another important KPI used by the road transport companies in Rwanda to guide their performance. Safety of the passengers and company staffs is determined by analyzing the frequency of accidents by the companies' buses, the extent of the casualties determined by analyzing the number of people who die and are injured during the accident and the extent of damage of the buses. A company whose buses are frequently involved in accidents cannot in any way be considered to be performing better. It should also be noted that transport companies which put effort in analyzing the safety of the passengers and their staff are in most cases more likely to institute measures to enhance the safety of their clients and employees. Nevertheless, instituting the measures to enhance the

safety of the clients and employees does not only depend on analyzing the safety of the travelers but rather on other factors such as availability of funds. It is possible for some companies to start operations on certain routes and they immediately implement travelers' safety measures.

References

- Fellessen, M. & Margareta, F. (2008). Perceived Satisfaction with Public Transport Service in Nine European Cities. *Journal of the Transportation Research Forum*, Vol. 47, No. 3, pp. 93-103
- Geurs, K. T., & Rirsema van Eck, J.R. (2001). *Accessibility measures: review and applicatons. RIVM report 408505 006*. National Institute of Public Health and the Environment, Bilthoven.
- Geurs, K. T., & van Eck, R. (2003). Accessibility evaluation of land use scenarios: the impact of job competition, land use and infrastructure developments for the Netherlands. *Environment and Planning 30* (1), 69 – 87.
- Levinson, D.M., Gillen, D. & Kanafani, A. (1998). The social costs of intercity transportation: a review and comparison of Air and Highway”.

- Transport Reviews*, Vol. 18, No. 3, 215-240).
- Niyonsenga, D. (2012). *Assessing public transport supply for Kigali, Rwanda*. MSc Thesis, Enschede, The Netherlands.
- OECD, (2008). *Implementation guide to ensure accountability and transparency in state ownership*. France
- OECD, (1997). *Performance Indicators for the Road Sector*, Road Transport and Intermodal Linkage Research Programme, OECD, Paris
- Republic of Rwanda, Ministry of infrastructure (MININFRA). (2008). *Transport sector policy*. Republic of Rwanda
- Republic of Rwanda, Ministry of Infrastructure (MININFRA). (2013). *Transport sector strategic plan for EDPRS-2*, March 2013
- Republic of Rwanda, Ministry of Infrastructure (MININFRA). (2012). *Public transport policy and strategy for Rwanda*. Kigali, Rwanda
- Rwanda Transport Development Agency. (2012). *Strategic transport master plan for Rwanda*. Republic of Rwanda, Kigali.
- Rwanda Utilities Regulatory Authority. (2013). *Transport operators, coverage and service delivery in Rwanda*.
- UK Department for Transport. (2010). *Performance Management for Efficient Road Freight Operations*. Retrieved from: <http://www.tandf.co.uk/journals/frameloader.html?http://www.tandf.co.uk/journals/tf/01441647.ht>
- UK Road Safety Authority. (2009). *Bus and truck operators' guide to managing for road safety*. London, UK. Retrieved from: www.rsa.ie
- Williams, M. & Richards Jr. G.M. (1990). *Research in Social Work: A primer*. Itasca. Illinois, F.E. Peacock Publishers Inc.
- Yin, R.K. (2003). *Case study research: design and methods*, Sage Publications.