



**ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
LOGISTICS AND SUPPLY CHAIN MANAGEMENT UNIT**

**ASSESSMENT OF FLEET MANAGEMENT PRACTICES IN THE
CASE OF UNITED NATIONS SELECTED AGENCIES IN
ETHIOPIA**

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Assessment on Fleet Management practices in the case of
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Declaration

I, SOLOMON ABEBE WORKNEH, declare that this thesis is my own original work on the topic entitled “Assessment on Fleet Management practices in the case of United Nations Selected agencies in Ethiopia” and that it has not been presented to any other University for similar or any other degree award. To this end, I acknowledged all sources of information that I used to produce the study appropriately and I would say perfectly.

Signature -----

Date -----

Confirmation

This is to certify that **Solomon Abebe** has carried out this research work on the topic entitled “Assessment on Fleet Management Practices in the case of United Nations Selected agencies in Ethiopia” under my supervision, this is his original work and has not been presented to any other a University for similar degree award and it can be submitted for the partial fulfillment of the requirements for the award of Masters of Art degree in Logistics and Supply Chain Management.

Busha Temesgen

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Date _____

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Acronyms

UNDP: United Nations Development Program

UNECA: United Nations Economic Commissions for Africa

ECOSOC: Economic and Social Council

UN: United Nations

GPS: Global Positioning System

VRS: Vehicle Routine Service

FMS: Fleet Management Section

UNHCR: United Nations Higher Commissioner Refuge

VRP: Vehicle Routine Problems

Abstract

Fleet management plays a very significant role as it manages the flow of goods along the supply chain and therefore helps in controlling supply chain costs. Fleet management systems describe the main characteristics of the various types of fleet management applications in use. Such areas include maintenance and repair, fuel management speed management, vehicle scheduling and routing, driver management and monitoring and tracking. The main objective of this study is to assess fleet management practice of the selected UN agencies found in Ethiopia. The study used descriptive research design and also used mixed approach of both quantitative and qualitative data method. The data instruments of this study has incorporated both primary and secondary source of data. The target population for this study was mainly involved in fleet management department for the selected UN agencies in Ethiopia and the study used all the total population of the study with a total of 42 respondents was selected. Out of 42 total populations 34 valid responses were collected and analyzed. The researcher used statistical package for the social sciences (SPSS 20.0) for the data analysis and get the required analysis results for study. The researcher also presents the results by using descriptive statistics such as mean, standard deviation, charts, tables and other related statistical data presentation techniques. The major finding of the study indicates that, there are challenges in facing component failure and accident, problems of monitoring, tracking, routing and scheduling and lack of driver training program for the selected UN agencies. To conclude this study, there are no mechanisms of monitoring, tracking and routing of vehicle and no regular preventive maintenance and repair. The results indicate that the agencies should be considering the importance of monitoring, tracking and routing of vehicles in implementing current technology like GPS and should have used software technology to properly track vehicle movement for better decision making process.

Keywords: *Descriptive Research, Fleet Management practices.*

CHAPTER ONE

INTRODUCTION

The main purpose of this chapter is presenting an overview of the research, a background of the study, research problem, research questions, research objective, and significance of the study, scope of the study, limitation of the study and definition of terms and brief summary of the structure.

1.1 Background of the Study

In today's modern world, fleets can come in many different shapes and sizes. Technically speaking, both a large, nationally-operating trucking company and a small, locally-operating delivery company are considered fleets. Fleet management covers the practices of overseeing, organizing, and recording all aspects of a company's fleet. These managerial duties might include, but aren't limited to, establishing regular vehicle maintenance schedules, establishing cost-saving measures, and implementing new driver training programs (UNWFP logistics manual 2011).

Fleet management for development is characterized by longer duration and response time, as well as low urgency and stochastic demand. A sustainable fleet management strategy is one that aims to reduce environmental impacts through a combination of cleaner vehicles and fuels, fuel-efficient operation and driving; and by reducing the amount of road traffic it generates (Besiou, Martinez, & van Wassenhove, 2012).

Fleet management comprises all actions needed to maintain and operate pieces of equipment throughout its life from the beginning stages of equipment acquisition to the final stages of asset disposal. Such areas include maintenance and repair, inventory control, training, and safety issues. The pressure to deliver faster and cheaper has made vehicle utilization an important aspect of fleet management (Jonsson 2008; Waters, 2009). Better vehicle utilization lowers operating cost through better planning (Waters, 2009).

Through better planning, transport planning requires software support with the use of transportation management systems. The aim is to determine routes that will provide

the highest overall utilization of vehicle capacity, with as many customers served and the largest amount of goods delivered, at the same time as the delivery times are minimized. Advanced planning also takes into account specific factors such as road and traffic conditions, in order to provide a more realistic route. Routing and delivery scheduling decisions are made according to the insights and experiences of the logisticians (Huang, Smilowitz, and Balcik, 2012).

Effective management of fleet operations is associated with enhanced productivity, operational efficiency and good customer service. Effective fleet management relies on a complete and integrated fleet management information system (FMIS), the use of life-cycle cost analysis, and appropriate decisions about fleet size and composition. When these practices are done well, agencies can make sound decisions about their fleets and provide assurance that the fleets are meeting missions in the most cost-efficient manner possible.

Organization Profile

UNDP works in about 170 countries and territories, helping to achieve the eradication of poverty, and the reduction of inequalities and exclusion. UNDP focuses on helping countries build and share solutions in three main areas like sustainable development, Democratic governance and peace building and climate and disaster resilience.

UNECA established by the Economic and Social Council (ECOSOC) of the United Nations (UN) in 1958 as one of the UN's five regional commissions, ECA's mandate is to promote the economic and social development of its member States, foster intra-regional integration, and promote international cooperation for Africa's development.

UNOCHA is the part of the United Nations Secretariat responsible for bringing together humanitarian actors to ensure a coherent response to emergencies. UNOCHA's mission is to mobilize and coordinate effective and principled humanitarian action in partnership with national and international actors in order to alleviate human suffering in disasters and emergencies.

1.2 Statement of Problem

According to Gitahi&Ogollah (2014), there is little literature on the current field vehicle fleet Management (Field VFM) in humanitarian operations. Data on vehicles is gathered and stored using unstructured databases like excel spreadsheets and text files (Wassenhove, 2010). The focus of this research paper is on the assessment of fleet management practices in the UN selected agencies in Ethiopia namely UNECA, UNOCHA and UNDP.

This research was designed to be a wide-ranging study of the problems encountered by fleet managements in UN selected organization in attempting to implement efficient practices within their fleets. In this connection, the researcher identified the cause of implementation problem. Baas and Latto (2005) and Baas et al (2005) reported that a wide range of factors affect fleet management practice, including the design of the vehicle, engine capacity, the nature of the load and how the vehicle is driven.

Based on preliminary assessment conducted with the existing UN selected organization in Ethiopia, the following problems seem like unskilled manpower, abuse of resources and driver addiction, unfair driver recruitment and selection; improper vehicle maintenance and repair schedule, lack of regular preventive and routine maintenance; inability to monitor vehicles & lack of using with current technology like GPS and poor coordination and planning of vehicle assignment..

Therefore, studying the current fleet management practices for the selected agencies in Ethiopia is very essential to make improvement on the poor fleet management practices for revising policies and to add information for further researches. This study, therefore, intends to fill the identified gap, by reviewing the practices of fleet management in the case of UN selected agencies so as to find out the challenges and prospects faced by the agencies in its efforts to reduce fleet management problems and to evaluate the constraints encountered on implementing and execution of the fleet management practice.

1.3 Research Questions

Having the scope in mind with regard to the assessment of fleet management practices, the research tried to answer these specific questions:

- What are the possible mechanisms to control drivers' resource abuse practice under the selected UN agencies in Ethiopia?
- What are the major problems encountered in the case of vehicle maintenance and repair in the UN selected agencies in Ethiopia?
- What are the mechanisms to make effective vehicles monitoring and tracking practice in selected UN agencies in Ethiopia?
- What are the possible means to improve the system of poor vehicle coordination and assignment for the selected agencies in Ethiopia?
- What are the major vehicle routing problems in the UN selected agencies in Ethiopia?

1.4 Objective of the Study

1.4.1 General Objective

The main objective of the study is to assess fleet management practices in the UN selected organization in Ethiopia.

1.4.2 Specific Objectives

This research specifically addressed the following objectives:

- To assess the possible mechanisms to control drivers' resource abuse practice for the selected UN agencies in Ethiopia.
- To assess and identify the major problems encountered of vehicle maintenance and repair in the UN selected agencies in Ethiopia.
- To assess the mechanisms to make effective vehicles monitoring and tracking practice in selected UN agencies in Ethiopia.
- To assess the major vehicle routing problems in the UN selected agencies in Ethiopia.

1.5 Significance of the Study

This study will help as a model or reference for those who will work in the area of fleet management. This research might help the agencies to understand the strength and weakness of their activity and help them to realize the gaps which need further improvement and provide good information for further researchers.

This research will also help to better understand the practices of fleet management in related with the agencies under consideration and help to identify which fleet management practices are more continuity for the success of the agencies by satisfying its customer.

1.6 Scope of the Study

This study mainly focused on the assessment of fleet management practices in the UN selected organization in Ethiopia of fleet department. There are different UN agencies found in Ethiopia. This study was delimited to UN selected organization namely UNECA, UNDP and UNOCHA as they are a leading UN agencies in Ethiopia and have a high fleet management activities as compared to the other UN agencies in terms of high number of vehicles, fleet department staff and the office is located the same geographical area. This study focused on Employees who work in the area of fleet management for the selected UN agencies and cover only the three selected agencies in Ethiopia because there is time limitation to cover all UN agencies in Ethiopia.

In addition, the following challenges happened in the time of doing this study which have possibility of bringing adverse effect on the result of the study like lack of sufficient resources necessary to accomplish the study, lack of sufficient data on the selected agencies.

There are different fleet management functions or activities in the UN selected agencies in Ethiopia like vehicle acquisition, fuel management, speed management, driver management, scheduling and routing, maintenance and repair, monitoring and

tracking and vehicle disposal. However, due to time constraints, the researcher was particularly focused on vehicle maintenance and repair, vehicle scheduling and routing, driver management and vehicle monitoring and tracking.

1.7 Limitation of the Research

There were some limitations that influenced this study like getting qualitative data from the selected agencies have been challenging for the researcher. The researcher faced an obstacle on easily finding secondary data, because of poor filing system and lack of well-organized availability of secondary data in the department.

1.8 Definition of Terms

Fleet:a group of motor vehicles owned or leased by a business or government agency

Fleet management: all actions needed to maintain and operate pieces of equipment throughout its life from the beginning stages of equipment acquisition to the final stages of asset disposal.

Vehicle:a means of carrying or transporting something planes, trains, and other vehicles such as a motor vehicle and a piece of mechanized equipment.

Vehicle routing systems (VRS): plan and optimize their daily vehicle routes, enabling them to reduce both fuel costs and fleet size.

Vehicle tracking: Monitoring the location of a truck, car or any moving vehicle using the GPS system. Widely deployed to keep track of truck fleets, vehicle tracking ensures that the vehicles are being used properly and that they can be recovered in the event they are stolen.

Vehicle scheduling: Chaining vehicle journeys into blocks of vehicle operations is one of the main functions of vehicle scheduling.

Fleet management systems (FMS): maintain, control and monitor fuel consumption and stock in any type of industry that uses transport, including rail, road, water and air, as a means of business

Lifecycle management: the stages of vehicle management from procurement to disposal.

Transportation: the physical movement of materials between points in a supply chain.

1.9 Organization of the Study

The study is organized under five chapters. Chapter one contains background of the study, statement of the problem, research question, objective of the study, significance of the study, delimitation, limitation of the study and definition of terms. Chapter two describes literature review part of the research. It includes both theory as well as empirical evidences related to the study topic. Chapter three describes research methodology part of the research, It describes the type and design of the research, concepts adapted from previous studies, detail description of participants/sample/ of the study, data sources, data collection tools and procedures, methods of data analysis Chapter four presents' results and their discussions. The findings of the study summarized and interpretation as well as discussion with the use of related literature review. Finally, Chapter five presents summary of finding, conclusion and recommendation part.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter contains a review of existing literature on fleet management practices and challenges. Specifically, the chapter describes the main characteristics of the various types of fleet management applications in use.

The literature of the study covers an explanation for fleet management practices and the recent trade in fleet management. The review will also discuss about the general practices of fleet management and its challenges. The theoretical and empirical literatures will be presented in combination of with each other, explicitly they are not separated. Although, in the review of empirical studies, it was difficult to get many literatures that are matched with the title of the study, the basic findings from some related studies are included.

2.1 Fleet Management Practices

Fleet management practices are well managed in the most economical, efficient and appropriate manner possible considering the available commercial transport alternatives and ecological aspects as well as safety and security of vehicle operations (UN logistics manual, 2012).

According to Sharon (2012) fleet management plays a very significant role as it manages the flow of goods along the supply chain and therefore helps in controlling supply chain costs. Fleet management systems describe the main characteristics of the various types of fleet management applications in use. Fleet management practices as a systemic approach to addressing the dynamic vehicle routing problem with time-dependent travel times.

There are some best practices for fleet management like register vehicle assets in an asset management system, plan for preventative maintenance, produce and implement a well-publicized statement of policy, conduct a thorough risk assessment, enforce health and safety measures, driver checks, damage control and post-accident procedures (Sharon, 2012).

According to Odadi (2012) Kenya have witnessed a rapid growth in the number of logistics service providers due to the high demand shown by many organizations, previously there was no focus on transportation of the products as the raw materials suppliers were in proximity to the organizations premises.

According to Gitahi and Ogollah (2014) there is poor fleet management in UNHCR Kenya where transport and logistics was viewed as an area in which cost appear out of line with the benefits and services accruing to the refugees. A report released by World Bank (2013) revealed that poor fleet management in the year 2011-2012 saw the UNHCR lose Ksh 20,000,000 due to escalating cost of repairs and this can be reduced if proper fleet management is put in place.

The report further indicated that UNHCR is losing over Ksh 5,000,0000 each year since 2010 as the fuel management system is not functioning as it should which indicates a failure in fleet management. A survey conducted by World Bank in 2005 revealed that in the sugar supply chain of South Africa, Zambia and Kenya, the transportation of cane is critical as it accounts for approximately 21% of the costs of growers and the costs are escalated by poor fleet management.

Gitahi and Ogollah (2014) argue that a well maintained and managed vehicle can result to 20-30% or more cost savings and according to Fleet Forum (2012), better acquisition, management and disposal of vehicles could save 12-17% of an estimated \$ 1 billion annual spend. This is a clear manifestation of inefficiencies and unnecessary cost incurred due to lack of a proper repair and maintenance plan. It is on such basis that more research should be carried out to establish how such costs can be reduced and its effect on the supply chain performance. In conclusion, it's clear that the field of fleet management has a lot which is yet to be explored especially in relation to its contribution to the supply chain and the researcher therefore finds the need to evaluate the contribution of fleet management on supply chain performance and present possible ways of enhancing supply chain performance through effective fleet management

2.2 Vehicle Maintenance and Repair

The main purpose and scope of vehicle maintenance and repairs are properly equipped, properly maintained, properly refueled and present a clean appearance. Vehicle becomes inoperative or in need of repair that affects the safety of the vehicle, that vehicle shall be removed from service for repair(Knowless, D. &Erjavec, J., 2004).Maintenance refers to preventive maintenance, the most widely used maintenance policy (Ozekici, 1995). Repairs are unplanned maintenance and they can be due to component failure accidents or sabotage(Brosh, Shlifer and Zeira, 1975),

According to Wang (2002) vehicle maintenance and repair classified replacement policies in age or mileage based, repair limit based or up to failure. The major reason or causes of vehicle maintenance and repair due to component failure, accidents or sabotage (Brosh, Shlifer and Zeira, 1975).State of Wisconsin, (2004) noted that it is the driver's or work shared vehicle coordinator's responsibility to ensure that all preventative maintenance is performed on schedule and have the vehicle serviced in a timely manner when notified of a recall or preventive maintenance. Failure to perform the maintenance and repairs in accordance with agency policy may result in loss of the vehicle or, in the event of damage to the vehicle, payment for vehicle repair (State of Wisconsin,2004).

2.2.1 Vehicle Maintenance Programs

Vehicle maintenance as a whole can generally be broken down into three primary categories, regardless of the type of fleet vehicle or company(Knowless, D., &Erjavec, J., 2004).

□ **Preventive maintenance (PM):** much like preventive medicine, this type of maintenance focuses on maintaining the overall “health” of the vehicle while keeping an eye out for any potential problems developing. Most of the work in getting started on a PM plan is figuring out where your vehicles stand in their state of maintenance. Examples of preventive maintenance include tire tread and tire pressure checks on a weekly basis, and employee awareness and reporting of any sounds, lights, or gauges that may indicate an issue.

□ **Routine maintenance:** similar to preventive maintenance, this type focuses on work that necessarily occurs on a regular basis for every type of vehicle. These services include oil changes, tire rotations, engine fluid checks, engine cleanings, and more. The frequency at which these services must be performed is dependent on the type of vehicle and its travel schedule. While consistent preventive and routine maintenance is crucial to keeping your fleet up and running smoothly, it's important to remember that there is such a thing as too much maintenance.

□ **Emergency maintenance:** Emergency maintenance is unscheduled and generally cannot be planned or anticipated. Ideally, with an excellent preventive and routine maintenance policy, a company can avoid any major emergency maintenance issues. However, certain scenarios, such as tire blowouts caused by objects on the road, cannot be foreseen or prevented. For that reason, your company should have an established mechanic (in-house or not) as well as a plan for how to arrange transportation of fleet vehicles in the case of a breakdown while on-the-road.

2.2.2 Spare Part Standards

Quality standards for spare parts are defined and released by the manufacturer of trucks and automotive equipment for their latest upgrades or improvements. However spare parts do not necessarily need to be produced by and/or purchased from the manufacturer. Many fast moving parts are offered at lower prices with the same quality from suppliers other than the genuine manufacturer. Such spare parts can be identified by across reference part numbering system (Knowless, D., &Erjavec,J.,2004).

2.2.3 Repairs, Preventive Maintenance and Recalls

State of Wisconsin (2004) noted that it is the driver's or work shared vehicle coordinator's responsibility to ensure that all preventative maintenance is performed on schedule and have the vehicle serviced in a timely manner when notified of a recall or preventive maintenance. Failure to perform the maintenance and repairs in accordance with agency policy may result in loss of the vehicle or, in the event of damage to the vehicle, payment for vehicle repair (State of Wisconsin, 2004).

2.3 Vehicle Routing and Scheduling

According to Mauro et al. (2012) the current logistics systems require real-time monitoring and interaction with fleet vehicles in order to achieve high utilization and rapid responses to customer needs. The technology needed to support real-time logistics requires mobile communication, GPS (Global Positioning System) and GIS (Geographical Information Systems), combined with information systems.

It is to minimize the total cost of providing the service. This includes vehicle capital costs, mileage, and personnel costs. But other objectives also may come into play, particularly in the public sector. Intelligent transportation systems comprising fully automated vehicles hold promise for improved efficiency, safety, and convenience over current systems. Vehicle routing problems (VRPs) have addressed the problem of computing efficient routes for the transportation of people and goods by a fleet of vehicles (Mauro et al, 2012). To realize the vision of truly intelligent transportation systems, approaches to these problems must address an increasingly richer set of constraints that may arise in various problem domains (McGraw-Hill, 1982)

2.3.1. Vehicle Routing Problems (VRPs)

According to Niaz,A.&Gabor,N. (2014), the transportation of passengers or the distribution of goods between depots and final users. VRPs can be expressed as mixed integer programming problems (MIP), defined on a graph in which the nodes correspond to locations of tasks to be performed, and edges correspond to travel segments between these locations.

To realize the vision of intelligent transportation systems with fully automated vehicles, there is a need for high level planning for single vehicles as well as fleets of vehicles. Vehicle routing and scheduling might be a set of spatially distributed tasks to a fleet of vehicles working together to achieve a high-level goal, in domains where tasks may be related by precedence or synchronization constraints and might have a choice of locations at which they can be performed. Such problems may arise, for

example, in disaster preparedness planning, transportation of people, and delivery of supplies (McGraw-Hill, 1982).

Martinez, Stapleton, and van Wassenhove (2011) found that fleet management information systems for coordination and routing at field level will have a positive impact on fleet performance and route optimization. However, there is generally a lack of data bases and funding to purchase such system.

Effective routing and scheduling of service vehicles are two important and difficult problems for managers of services. The consequences of poor planning are costly, and a decision maker must frequently fine-tune the system to ensure that the needs of the customer are being met in a timely and cost-effective fashion. The criterion used to measure the effectiveness of service delivery depends on the type of service. Although minimizing total cost is an important criterion, for some services, criteria such as minimizing customer inconvenience and minimizing response time may be equally if not more important(Martinez, Stapleton, and van Wassenhove, 2011).

2.4 Vehicle Monitoring and Tracking

Fleet management focuses on providing the company with a means to manage its assets through control of the different variables involved in the process. Monitoring has as its objective, the exact product location, tying in with other variables related to the performance of the assets and the professional staff involved (Mauro, V., Silvio R. I. Pires, & Fernando B.S.,2012).

Vehicle tracking and locking system installed in the vehicle, to track the place and locking engine motor. The place of the vehicle identified using global positioning system (GPS) and Global system mobile communication (GSM).

According to Mauro etal (2012), the current logistics system require real-time monitoring and interaction with vehicle fleet vehicle in order to achieve high utilization rapid response to customer needs. Implementing real-time vehicle tracking as part of a commercial company's mobile resource management policy is essential

for comprehensive operational control, remote driver security and fuel savings. Vehicle tracking system of any organization is the help GPS.

Currently GPS vehicle tracking ensures their safety as travelling. This vehicle tracking system found in clients vehicles as a theft prevention and rescue device. Vehicle owner or police follow the signal emitted by the tracking system to locate a robbed vehicle in parallel the stolen vehicle engine speed going to decreased and pushed to off. After switch of the engine, motor cannot restart without permission of password. This system installed for the four wheelers, Vehicle tracking usually used in navy operators for navy management functions, routing, send off, on board information and security. The applications include monitoring driving performance of a parent with a teen driver. Vehicle tracking systems accepted in consumer vehicles as a theft prevention and retrieval device (Mauro etal, 2012)

The challenges of successful monitoring involve efficient and specific design, and a commitment to implementation of the monitoring project, from data collection to reporting and using results. Fleet tracking is the use of GPS technology to identify, locate and maintain contact reports with one or more fleet vehicles. The location history of individual fleet vehicles allows precisely time-managed, current and forward journey planning, responsive to changing traveling conditions. Applications of commercial vehicle tracking solutions in the fields of transport, logistics, haulage and multi-drop delivery environments can include optimized fleet utilization, operational enhancements and dynamically remote-managed fleets (Mauro etal, 2012)

Sharon (2012) noted that main goals of any fleet management system are to provide information to improve efficiency, decrease downtime and in-service breakdowns, reduce inventory, lower ownership cost and avoid waste. According to him, the main goals of any fleet management system are to provide information to improve efficiency, decrease downtime and in-service breakdowns, reduce inventory, lower ownership cost and avoid waste.

Sharon(2012) discussed choose good fleet management software and uses it in decision making. In order to properly track costs, fleet management software is a must. Software tied to make, model, class and department should track preventive and

scheduled maintenance, fuel usage, repair time, etc., for each vehicle. Software should interface with fuel systems. Many good fleet management software systems are on the market.

Huseyin(2006) investigated in the car allocation business, the railroad company receives car requests from its clients on a daily bases. These requests are for a particular number of cars of a particular type, at a particular operating station and on particular date. The company decides which cars should be used to satisfy the requests and tries to get these cars to the clients. After using the cars for a certain amount of time, the clients return the cars to the company. To serve the clients in a prompt manner and to set the imbalances between where the requests originate and where the cars are returned, the company continuously repositions the empty cars (Huseyin,2006).

According to UN logistics manual (2012) fleet tracking and monitoring is the management and maintenance of organization vehicles and logistics assets with the aim of providing effective and efficient transportation of goods in order to achieve the operational goals like mileage (in kilometers), Fuel Consumption (in liter/100km), availability (days in %), utilization (days in %), cost per vehicle / asset per an (\$/yr), cost per kilometre (\$/km), cost per mtn (\$/mtn) and cost per tokm (\$/tokm)

2.5 Driver Management

Baas (2012) investigated that excessive speed and aggressive fuel-inefficient driving techniques increase fuel consumption and increase incident rates. A number of initiatives were introduced, aimed at improving driver behavior and education.

The goal of the dynamic driver management scheme developed herein is to determine thebest load dispatch times and driver-to-load assignments for some fixed-duration planning period (Lin, Jovanis,&Yang (1993).

According to Baas (2012) identified steps taken to improve driver management included, developing a comprehensive prestart check sheet, ensuring that drivers

understand that they are responsible and accountable for their actions, improving driver recruitment procedures, including the use of pre-employment external assessments, requiring all new staff to complete a comprehensive in-house induction and training program (new staff remained under training until being assessed as fully competent by a qualified driver trainer) , educating and coaching drivers about vehicle standards and visual inspections, holding regular monthly driver forums , developing a culture where a driver can intervene in any unsafe or non-compliant act. Drivers developing their own voluntary code of compliance and policies, implementing in-cab driver assessments (six-monthly) and additional coaching from driver trainers or senior drivers when required, preparing monthly feedback reports on individual driver performance and vehicles related to speed and fuel consumption, developing a culture of continuous improvement within the driver teams to focus on total fuel consumption and driving techniques, including urban operation and all drivers participating in an individual driver recognition/incentive scheme that rewards positive behaviors and outcomes. The level of recognition was directly related to individuals' safety behavior, customer service and incident rates. The drivers' recognition scheme encouraged honest reporting(Baas, 2012).

Driver management technology is designed to take load and driver information for some time horizon beginning at some time epoch and attempt to make the following related decisions (Baas, 2012) like which driver to assign to each load?, when to dispatch each load?, maximize the number of loads that are dispatched on time, minimize the number of driver long rests at non-domicile terminals (foreign beds), construct driver duties (sequences of dispatches between long rests) with drive times close to the allowed maximum, construct driver duties with little or no waiting time between consecutive load dis-patches and minimize the use of empty repositioning.

2.6 Fleet and Vehicle Management

According to Azevedo, Ferreira and Leitão (2007), fleet management systems are perceived in terms of how they are able to benefit companies by realizing efficiency and profitability. In the knowledge-based economy of today, the rapidly changing and uncertain environment means that transport firms are facing their biggest challenge in

how to address the current situation and capture a competitive advantage. The increasing competence in the market is an important factor that drives the adoption of new technologies and innovation, as companies search for new opportunities to cut costs by improving process efficiency or by developing new products.

Baas (2012) identified steps taken to improve vehicle management like monitoring all idle override exceptions, maximizing organizational operation effectiveness, recording fuel consumption, looking for the best fuel economy, specifying automatic shifting transmissions for improved fuel economy and safety.

Baas (2012) Alexander Petroleum Services Ltd (APSL) knew that not only are the selection and purchase criteria of a vehicle critical, but also the ongoing support from the original equipment manufacturer (OEM) and other associated service providers. This after-sales support from all inter-related service providers is critical in enabling a transport operator to achieve the safest, most cost-efficient and fuel-efficient result from any one truck.

Baas (2012) the author identified steps taken to improve vehicle management included, limiting the speed of all vehicles to 88km/h , resetting all vehicle default idle time cutoffs to three minutes , monitoring all idle override exceptions ,maximizing the use of OEM-fitted driver displays recording fuel consumption , reprogramming the electronic transmissions to facilitate earlier upshifting ,matching engine size to the required tasks when specifying a vehicle from new, looking for the best fuel economy, specifying automatic shifting transmissions for improved fuel economy and safety, planning all predictive and preventative repair and maintenance schedules to minimize repair and maintenance costs, and unplanned breakdowns , using genuine OEM parts when replacing components, implementing a tire management program with service providers using KPIs based on tire pressures, rotations and maximum tire life , monitoring electronic brake system interventions, Working with a GPS service provider to upgrade the vehicle management systems to include an audible alert when the vehicle speed reaches 90km/h as tracked by the GPS system(Baas,2012).

2.7 Fleet Management System (FMS)

The FMS is an essential management tool for optimizing the management of fleet operations and, at the same time, it provides a continuous and comprehensive cost and performance monitoring of organization. The FMS is a centralized web-based database for storing and reporting fleet operation related key data to support management thereby ensuring efficient use of resources.

A management tool that is also known as an intelligent fleet management system. It provides the manager with essential information through GPS technology which gives the accurate position, velocity and time data of the fleet. GPS provides this data free of direct user charge worldwide, continuously, and under all weather conditions (Charlton, S, H Mackie, 2010).

Fleet management is knowledge of a complex set of principles used to manage a fleet of vehicles efficiently and effectively. A fleet manager knows the difference between lease versus purchase decisions, asset utilization principles, cost versus benefit analyses, opportunity cost principles, present value of money, life cycle modeling and other complex financial theories.

According to Charlton, fleet management system by using GPS tracking can help us controlling fuel costs, increasing worker productivity, reduce operating expenses, increase fleet security and improve customer services

2.8 Transportation Management

Transportation is the most expensive logistical activity, representing more than 40% of the expenses of most organizations. Transportation amounts to over US\$400 billion in annual expenses in America alone, with global transportation expenditures exceeding US\$2 trillion annually (UN logistics manual 2006).

According to UN logistics manual (2006), transportation is at the center of logistics as it represents the physical movement of materials between points in a supply chain. High customer expectations and little tolerance for inadequate performance create a

competitive environment for operating a fleet, which forces fleet managers to achieve high levels of reliability and cost-efficiency.

Transportation is at the center of logistics as it represents the physical movement of materials between points in a supply chain. High customer expectations and little tolerance for inadequate performance create a competitive environment for operating a fleet, which forces fleet managers to achieve high levels of reliability and cost-efficiency (Coyle et al., 2010).

The ability to track and control the movement of vehicles every minute may translate into hundreds of dollars as regards an organization's bottom line. Necessary costs, such as fuel and employee overtime, may be closely monitored and verified to ensure that a company is operating at optimal efficiency.

Bask et al (2010) observed that fleet and transportation services in developing countries have been changing and diverging into several service segments. Gradual diminishing of the existing working staff in an organization due to retirement, accidents among others. Banister and Stead (2004:611) proposes the classification of the possible impact of ICT on transport into the following three categories like the stimulation of more travel as new opportunities become available, the substitution for travel in view of the fact that activities will be carried out remotely rather than by means of travel, the modification of travel as the logistics and ICT processes combine to change the ways in which activities are carried out.

2.9 Fleet Management Challenges

There are many challenges encountered in the modern transportation process, including the increase in congestion; lower costs; improved customer service; heightened terrorism/theft/security issues; information-sharing; regional multi-modal logistics growth; and the proliferation of new complex tools with which to optimize route scheduling. Automatic vehicle location, which is the combination of the positioning and communication system, allowing the position of the vehicle to be

known while performing operations associated with this information (Mauro *et al.* 2012).

The following problems that still plague fleet management in the public sector, today (Fleet report, Department of Transport, Arlington 2005) such as underutilization of vehicles, lack of integrating fleet data into existing software systems, unable to monitor all assets in relation to vehicle, lack of using software systems, lack of vehicle tracking and registering, inability to use GPS, improper vehicle maintenance and repair schedule, vehicle data inaccuracy, volatility of fuel costs, high maintenance cost and lack of driver skills and training program

2.10 Road Infrastructure

The development of road system in the country has been generally progressing on the basis of highway and road sector development programs. Apart from urban roads and rural trails and footpaths, the present road system could be generally divided into three hierarchical functional classifications: the Federal, Regional and Rural roads. The length of Federal and Regional road network is about 46,812 of which 6,938 is asphalt/concrete surfaced. This is road network density of 0.57 km per 1000 of population or 41.4 km per square km of area (Fekadu, 2013).

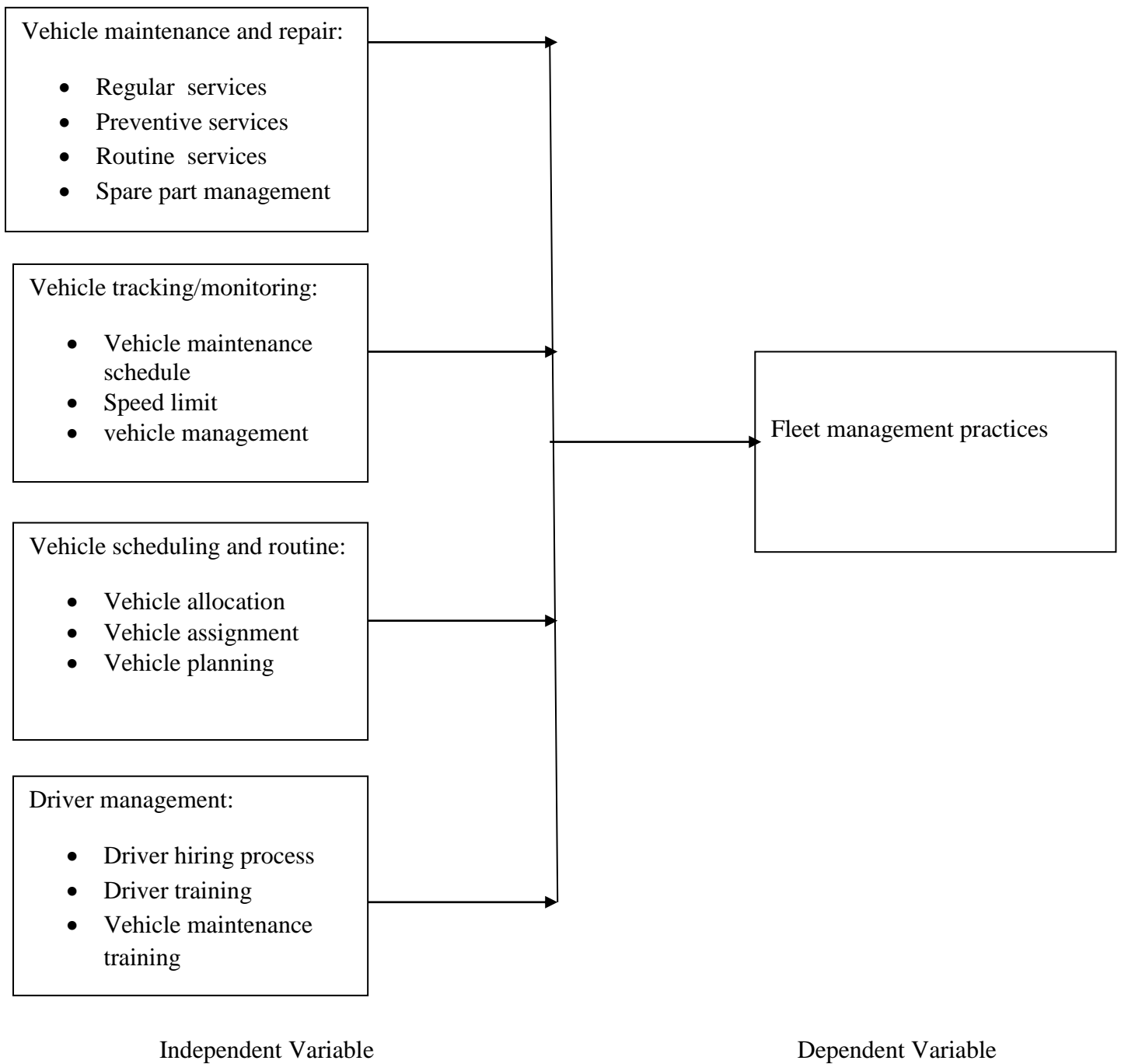
These values for the weighted mean of road density in all of Africa, is 2.6 km per 1000 per tons and density of 58 km per 100 square km (Fekadu, 2013) . The trunk road network radiates from Addis Ababa to the regional cities with minimal of gridding. Often areas close by through air distance of hundreds of kilometers by road because one must pass through Addis Ababa. This makes agricultural freight transport within country from areas with excess produce to deficient areas often expensive (Fekadu, 2013). The federal road network gives good connectivity to all regional headquarters, main cities, ports and main international entry points. However, only about 3 % of the rural area are presently connected with all-weather road and many of these roads are in poor condition (Fekadu , 2013) .

To summarize the above literature review in related to summary and conclusion of the literature such as failure to perform the maintenance and repairs in accordance with agency policy in the event of damage to the vehicle,. This indicated that loss of agencies vehicle and incurred additional cost of maintenance and repair. Vehicle routing problems have addressed the problem of computing efficient routes. This indicated that underutilization of vehicles. Fleet management information systems for coordination and routing at field level will have a positive impact on fleet performance and route optimization. This indicated that there is a better allocating driver and vehicles effectively, vehicle planning and good customer services. Fleet tracking is the use of GPS technology to identify, locate and maintain contact reports with one or more fleet vehicles. This indicated that to know where the vehicles are and locate the status of vehicles every time to protect loss of agency resources. Drivers are respecting code of compliance and policies of the agencies. This indicated that preventing loss of organizational assets.

2.11 Conceptual Framework

Conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study (Mugenda, (2008)). Based on the overall review of related literature and the problem statement of the research, the following conceptual framework in which this specific study governed will be developed as follows:

Figure 2.1 Conceptual framework



Data Source: Own Survey, 2018

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

A research methodology is a systematic process which is followed in conducting a research study (Kothari, 2005:10). It comprises a body of knowledge that enables researchers to explain and analyze the research methods they use, indicating their limitations and resources, identifying their presuppositions and consequences, and relating their potentialities to research advances. This chapter is about the methods that was used for collecting information in the field and how the study was conducted, the applied methods and techniques in data collection and the reasons as to why they used according to the research. Accordingly, the issue of research methodology is essential to any study and an appropriation between the research paradigm, type of data, and collection methods has significant implications for the research findings.

3.2 Description of the Study Area

There are different UN agencies found in Ethiopia and the researcher was selected only 3 agencies namely UNDP, UNECA and UNOCHA as they are a leading UN agencies in Ethiopia and have a high fleet management activities in terms of high number of vehicles, fleet department staff and the office is located the same geographical area.

3.3 Research Approach

The research approach used was mixed approach of quantitative and qualitative data. A quantitative data is more suitable for highly structured research that may be statistically measured (V. Chinnathambi, 2013). According to him, there is a tendency for quantitative researchers to reach generalized findings. A qualitative data is to describe, analyze and understand the behavior or impact of a certain phenomenon, often by using hermeneutic science (interpret and analyze) so a new theory or understanding may be outlined (V. Chinnathamb

3.4 Research Design

Research design may be viewed from many perspectives and is often seen as controversial (Knox, 2004). However, it underpins the types of questions that may be addressed and the nature of the evidence that is generated (Clark, Lotto & Astuto, 1984:41).

The researcher used descriptive type of research design which helps to describe a certain phenomenon or characteristics concerning a subject of a population, estimates of the proportions of the population that have those characteristics and to discover associations between different variables (Cooper & Schindler, 2003).

Creswell (2003) observes that a descriptive research design is used when data was collected to describe persons, organizations, settings or phenomena. Descriptive design is ideal as the study was carried out in a limited geographical scope and hence is logistically easier and simpler to conduct considering the limitations of this study (Mugenda, 2008). The design also has enough provision for protection of bias maximized reliability (Kothari, 2008). This design was selected because the researcher wished to collect information on people's attitudes and opinions as well as facts from existing reports in relation to assessment on the practices of fleet management in the case of UN selected agencies in Ethiopia..

3.5 Unit of Analysis

This study was assessed the practices of fleet management for the selected UN agencies in Ethiopia. Unit of analysis for this study was fleet management practices in the case of UN selected agencies in Ethiopia and unit of inquiries were transport supervisor, transport assistant and logistics assistant.

3.6 Population

The population of the study comprised of all the higher and middle officers in fleet and transport department Addis Ababa that make appeals for assistance and are actually involved in the practice of fleet management. Hence, a total of 42 respondents were selected. The participants/population/ of the study were transport supervisors, logistics assistants and transport assistants for the selected agencies in Ethiopia.

3.7 Data Sources and Types

The researcher used both primary and secondary data sources. The primary data are those that collect data for the first time while secondary methods are those where the researcher uses data collected by other people (Oates, 2006:234). The structured questionnaire and the interview checklist have been adopted (Martinez et al., 2010).

The primary data was collected through questionnaires and interviews. There are both advantage and disadvantage with primary data. The main advantage is that the data are collected particularly for the study at hand (Ghauri and Gronhang 2005; patel and Davidsson, 2005). The main disadvantages for primary data is that the gathering of primary data can be both time consuming and costly.

The secondary data was relied on previous data collection and the data should be starting point of all research (Ghauri, Gronhaus,2005). The secondary data used relevant books, the policy of the organization, Journal articles, and internet and research report.

3.8 Data Collection Procedure

The procedure in this research was identifying respondents for questionnaires and interview; clear consent was given to them to understand the objective of the study and to give an attention on its importance. The researcher distributed questionnaires electronically to all respondents since the respondents had email address and internet access. Finally interview and questionnaire data were collected respectively and properly from the respondent by the redesign schedule.

3.9 Data Analysis

The researcher used a statistical package for the social sciences (SPSS 20.0) for the data analysis. In analyzing the data collected, the following descriptive analytical methods were used. Data obtained from official records were tabulated into different categories and analyzed using simple statistical methods such as percentages and graph. Information obtained from the secondary and primary source are used to make

a descriptive analysis of the situation and based on the findings relevant conclusions and recommendations are drawn.

In order to achieve the stated research objectives, the collected data was analyzed based on the nature of the study objective. After the data was collected, the data entry and cleaning was done. The result of the data analysis was presented by using tables, figures and charts. By using statistical package for social science software the data obtained from each study participant was analyzed using frequency and percentage quantitatively; while the information obtained from the interview analyzed qualitatively. After successful gathering of the data, the data was analyzed by using both descriptive statistics (table, mean and standard deviation) and inferential statistics with a computer program called SPSS.

3.10 Validity and Reliability

Validity test was conducted to ensure that the measure includes sufficient coverage of the investigated questions, meanwhile the face validity conducted to validate the items of research questionnaire. Before the main study the researcher carried out the pilot survey to minimize errors due to improper design elements, such as question wording or sequence. So it is important to discover confused interview instructions; learning and ensures validity of the questionnaire whether it is too long or too short of the information.

Reliability test has been done to check whether the questionnaire consistently reflects what it means measure or not. For the test of reliability Cronbach's alpha was used as a measure of internal scale consistency using SPSS software version 20.0. According to Tavakol, M & Dennick, R (2011), there are different reports about the acceptable values of cronbach's alpha, ranging from 0.70 to 0.95. So based on the above result the scale is reliable.

3.11 Ethical Consideration

The researcher informed participants the issue of confidentiality and highly secured on answering the questionnaires as well as the researcher gave consent to respondents their response did not disclose for anybody without their consent. To this effect a letter of cooperation was written to the department of fleet department concerned officials and practically those officials were shown unreserved support and cooperative to the researcher.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

The chapter consists of two major parts, the first section deals with the demographic profile of respondents, and the second section presents the analysis and discussion of qualitative and quantitative main data. The research targeted on the assessment of

fleet management practices in the case of UN selected agencies. The findings of the study were presented to answer the leading research questions and the results are categorized according to fleet management practices.

The data obtained from the primary source using structured questionnaires and secondary data are presented. 42 questionnaires were distributed to the respondents and from this only thirty four (34) were returned and accepted but 8 questionnaires were not returned. This accounts for 80.95% of response rate. Therefore, the response rate found is very good for further analysis of the data.

Interview schedules were developed and administered with three (3) key selected fleet department supervisor and manager that who have knowledgeable and experienced on the issue under this study. Thus, the selected interviewees were communicated by the researcher himself to be interviewed face-to-face to get further and reliable information, opinion, and attitudes of the respondents to enrich or help the data gathered by questionnaire. Thus, based on the responses obtained from the respondents data presentation and analysis were made as follows.

4.2 Reliability Test

Reliability test has been done to check whether the scales used on the questionnaire consistently reflect what it mean or not. For the test of reliability Cronbach's alpha was used as a measure of internal scale consistency using SPSS (Statistical package for social science studies).

According to Tavakol, M & Dennick, R (2011) there are different reports about the acceptable values of cronbach's alpha, ranging from 0.70 to 0.95. So based on the above result the scale was reliable.

Table 4.1 Reliability Test

Item	Cronbach's Alpha	N of Items
Vehicle Maintenance and Repair	.961	6
Vehicle Monitoring and Tracking	.959	5

Vehicle Scheduling	.963	5
Vehicle Routing	.953	3
Driver Management	.968	7

Source: own survey result, 2018

4.3 Characteristics of Respondents

The demographic profile of the respondents is presented and analyzed below in assessing respondents' age, gender, salary, work experience and education level of the respondents' is that, when the respondents are more experienced and educated they have better opportunity to understand the case and give better response than else. The details of the characteristics of the respondents have shown clearly as follows.

Table 4.2 Demographic Information of the Respondents

Items		Frequency	Percent
Sex	Male	20	58.82
	Female	14	41.17
	Total	34	100
Age	18-25 yrs	6	17.64
	26-31 yrs	10	29.41
	32-39 yrs	8	23.52
	40-45 yrs	2	5.88
	46-51 yrs	4	11.76
	Above 52 yrs	4	11.76
	Total	34	100

Educational Background	Certificate	0	0
	12 complete	12	35.29
	Diploma	20	58.82
	Degree	1	2.94
	M.A degree and above	1	2.94
	Total	34	100
Years of Service	1-5 years	2	5.88
	6-10 years	6	17.64
	11-15 years	14	41.17
	16-20 years	7	20.58
	Above 20 years	5	14.70
	Total	34	99.97
Salary Level	5000-1000	0	0
	10001-15000	0	0
	15001-20000	5	14.70
	20001-25000	19	55.88
	25001 and above	10	29.41
	Total	34	100

Source: own survey result, 2018

As shown in table 4.2 above, 58.82% of the respondents were male and the remaining 41.17% were female. This implies that the majority of the respondents were male.

Based on the above table 4.2, 17.64% of the respondents were between 18-25 years age. The next age group with valid percent of 29.41% were between 26 and 31. The other group with valid percent of 23.52% were between 32 and 39. On the other hand, respondents within age group of 46-51 and above 52 years show similar percentage, which is 11.76%. In addition, 40-45 age groups represent 5.88% of valid respondents. Thus, the majority of the respondent was age between 26-31 years.

As shown in table 4.2 above, the highest education level attained by most of the respondents was diploma which represents 58.82%. 35.24% of the respondents was 12 complete. Out of the valid respondents, first degree and M.A degree and above have similar results which accounts 5.88%. This indicated that the majority of the respondents working in the organization were diploma holder and able to understand and clearly identifies practices of Fleet management.

Data in table 4.2 shows 5.88% of the respondents served from 1-5 years, 17.64% of the respondents have service years of between 6-10 years, 41.17% of the respondents served from 11-15 years, 20.58% of the respondents have service years of between 16-20 years, 14.70% of the respondents served above 20 years. This implies that 41.17% of the respondents have between 11-15 years of work experience within the case of selected agencies and it is sufficient to judge and give views. This is because when the respondents are more and more experienced within the organization they have better opportunity to know more and more about the organization.

As shown above in table 4.2, 14.70% of the respondents from 15001-20000, 55.88% of the respondents from 20001-25000. The remaining 29.41% of the respondents 25001 and above. This indicates that the majority of the respondents were the salary ranging from 20001-25000.

4.4 Analysis and Discussion on the Dimension of Assessment of Fleet Management Practices for the Selected Agencies.

Descriptive statistics entail transformation of raw data into a form that would provide information to a set of factors in a situation. Thus, the profile of the respondents together with their perception about the topic of the study were presented, analyzed and interpreted under this section through descriptive statistics relating the objective of the study. For the analysis of all these variables, mean and standard deviation is used particularly mean value of the respondents has considered as an important indicator to the extent of the organization's practices on each item. In this part of the study's report analysis conducted on data gathered to assess fleet management practices based on four dimensions were presented. Descriptive statistics were used to analyze the data in this study.

The researcher intended to indicate fleet management activities of the selected agencies using aspects in a five point Likert scale i.e 'strongly disagree' (1) 'disagree' (2) 'Neutral' (3) 'agree' (4) and 'strongly agree' (5) and interview conducted with transport managers and department heads.

The scores of neutral have been taken to represent a variable which had a mean score of 0 to 1, the scores of disagree have been taken to represent a variable with a mean

score of 1 to 2, the score of strongly disagree have been taken to represent a variable which had a mean score of 2 to 3, the score of agree have been taken to represent a variable which had a mean score of 3 to 4 and the score of strongly agree have been taken to represent a variable which had a mean score of above 4.

Table 4.3 Descriptive Statistics for Vehicle Maintenance and Repair

Vehicle Maintenance and Repair	N	Mean	Standard Deviation
The organization has proper maintenance and repair scheduling system of vehicles.	34	2.56	1.260
There is a problem of regular preventive and routine servicing of vehicles at your agency.	34	3.62	1.518
The organization has a mechanism to follow up on regular services of vehicles.	34	1.74	1.109
There are challenges encountered of vehicle maintenance and repair at your agency	34	3.32	1.451
The organization faced a challenge of component failure and accidents of vehicles.	34	3.68	1.319
The organization has faced problems of getting genuine spare parts for maintenance and repair of vehicles.	34	2.12	1.387
Valid N (listwise)	34		

Source: Survey data, 2018

Table 4.3 shows the descriptive statistics of vehicle maintenance and repair dimension of fleet management practices of the selected agencies. The meanscore for the first item which is 2.56 which shows the respondents replied “strongly disagree” as per the standard for interpreting mean results that the organization has proper maintenance and repair scheduling system of vehicles. The mean score for the second item which is 3.62 which shows the respondents replied “agree” as per the standard for interpreting mean results that there is a problem of regular preventive and routine servicing of vehicles. The mean score for the third item which is 1.74 which shows the respondents replied “disagree” as per the standard for interpreting mean results that the organization has a mechanism to follow up on regular services of vehicles. The

mean score for the fourth item which is 3.32 which shows the respondents replied “agree” that there are challenges encountered of vehicle maintenance and repair. The mean score for the fifth item which is 3.68 which shows the respondents replied “agree” that the organization faced a challenge of component failure and accidents of vehicles. The mean score for the sixth item which is 2.12 shows the respondents replied “strongly disagree” that the organization has faced problems of getting genuine spare parts for maintenance and repair of vehicles. Accordingly, majority of the respondents replied “agree” by mean score of 3.68 that the agencies faced a challenge of component failure and accidents of vehicles. Failure to perform the maintenance and repairs in accordance with agency policy may result in loss of the vehicle or, in the event of damage to the vehicle, payment for vehicle repair (State of Wisconsin, 2004).

Table 4.4 Descriptive Statistics for Vehicle Monitoring and Tracking

Vehicle Monitoring and Tracking	N	Mean	Standard Deviation
The organization has been using current technology like GPS .	34	2.26	1.238
The organization faced problems of using computerized monitoring and tracking system of vehicles.	34	3.50	1.376

There are mechanisms of monitoring and tracking vehicle at your agency.	34	2.44	1.260
The organization has a problem of monitoring and tracking vehicles at your agency	34	4.03	1.167
There are a system in improving vehicles tracking and monitoring system at your agency	34	2.26	1.286
Valid N (listwise)	34		

Source: Survey data, 2018

Table 4.4 shows the descriptive statistics of vehicle monitoring and tracking dimension of fleet management practices of the selected agencies. The mean score for the item "The organization has been using current technology like GPS" was 2.26 which shows the respondents replied "strongly disagree" as per the standard for interpreting mean results. The mean score for the item "The organization faced problems of using computerized monitoring and tracking system of vehicles" was 3.50 which shows the respondents replied "agree". The mean score for the item "There are mechanisms of monitoring and tracking vehicle" was 2.44 which shows the respondents replied "strongly disagree". The mean score for the item "The organization has a problem of monitoring and tracking vehicles" was 4.03 which shows the respondents replied "strongly agree". The mean score for the item "There are a system in improving vehicles tracking and monitoring system" was 2.26 which shows the respondents replied "strongly disagree" as per the standard for interpreting mean results. Accordingly, majority of the respondents replied "strongly agree" by mean score of 4.03 that the organization has a problem of monitoring and tracking vehicles for the selected agencies. Vehicle tracking systems accepted in consumer vehicles as a theft prevention and retrieval device. (Mauro et al. 2012). Sharon (2012) discussed choose good fleet management software and uses it in decision making.

Table 4.5 Descriptive Statistics for Vehicle Scheduling

Vehicle Scheduling	N	Mean	Standard Deviation
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The organization has poor coordination and planning of vehicle assignment in day to day business operation.	34	3.50	1.354
There are effective vehicle allocations to staff at the time of transport service request at your agency.	34	2.24	1.075
There is a well known underutilization of vehicles at your agency.	34	3.38	1.349
There is vehicle database system of vehicle scheduling at your agency.	34	2.56	1.501
The organization has a problem of vehicle scheduling programs.	34	3.88	1.297
Valid N (listwise)	34		

Source: Survey data, 2018

Table 4.5 shows the descriptive statistics of vehicle scheduling dimension of fleet management practices of the selected agencies. The mean score for the first item which is 3.50 with a standard deviation of 1.35 which shows the respondents replied “agree” as per the standard for interpreting mean results that the organization has poor coordination and planning of vehicle assignment in day to day business operation. The mean score for the second item which is 2.24 with standard deviation of 1.07 which shows the respondents replied “strongly disagree” that there are effective vehicle allocations to staff at the time of transport service request. The mean score for the third item which is 3.38 with standard deviation of 1.34 which shows the respondents replied “agree” that there is a well-known underutilization of vehicles. The mean score for the fourth item which is 2.56 with a standard deviation of 1.5 which shows the respondents replied “strongly disagree” as per the standard for interpreting mean results that there is vehicle database system of vehicle scheduling. The mean score for the fifth item which is 3.88 with a standard deviation of 1.2 which shows the respondents replied “agree” as per the standard for interpreting mean results that the organization has a problem of vehicle scheduling programs. Accordingly, majority of the respondents replied “agree” by mean score of 3.88 that the organization has a problem of vehicle scheduling programs. According to Mauro et al (2012), the current logistics systems require real-time monitoring and interaction with fleet vehicles in order to achieve high utilization and rapid responses to customer needs.

Table 4.6 Descriptive Statistics for Vehicle Routing

Vehicle Routing	N	Mean	Standard Deviation
There is a well known underutilization of vehicles at your agency.	34	3.38	1.349
The organization has a problem of vehicle routing at your agency.	34	4.03	1.029
The organization has poor coordination and planning of vehicle assignment in day to day business operation	34	3.50	1.354
Valid N (listwise)	34		

Source: survey data, 2018

Table 4.6 shows the descriptive statistics of vehicle routing dimension of fleet management practices of the selected agencies. The mean score for the item” There is a well known underutilization of vehicles” was 3.38 with standard deviation of 1.34 which shows the respondents replied “agree“as per the standard interpretation of mean results. The mean score for the item” The organization has a problem of vehicle routing” was 4.03 with standard deviation of 1.02 which shows the respondents replied “strongly agree”. The mean score for the item” The organization has poor coordination and planning of vehicle assignment in day to day business operation” was 3.50 with standard deviation of 1.35 which shows the respondents replied “agree” as per the standard for interpreting mean results. Accordingly, majority of the respondents replied “strongly agree” by mean score of 4.03 that the organization has a problem of vehicle scheduling programs Martinez, Stapleton, and van Wassenhove (2011) found that fleet management information systems for coordination and routing at field level will have a positive impact on fleet performance and route optimization. Thus, the result revealed that

Table 4.7 Descriptive Statistics for Driver Management

Driver Management	N	Mean	Standard Deviation
There is lack of giving driver job related training program at your agency.	34	4.00	1.181

The organization has unskilled driver manpower.	34	3.97	1.193
There is a mechanism to manage drivers at your agency	34	2.29	1.315
There are a well known driver abuse of resources and driver addiction at your agency.	34	3.68	1.628
The driver has proper follow up on vehicle maintenance and repair schedule program at your agency	34	2.44	1.307
The driver has proper recording of vehicle usage in the logbooks at your agency.	34	2.68	1.319
The organization has fair driver recruitment and selection procedures.	34	2.06	1.043
Valid N (listwise)	34		

Source: survey data, 2018

Table 4.7 shows the descriptive statistics of driver management dimension of fleet management practices of the selected agencies. The mean score for the first item which is 4.00 with standard deviation of 1.18 which shows the respondents replied “agree” as per the standard for interpreting mean results that there is lack of giving driver job related training program. The mean score for the second item which is 3.97 with a standard deviation of 1.19 which shows the respondents replied “agree” that the organization has unskilled driver manpower. The mean score for the third item which is 2.29 with a standard deviation of 1.31 which shows the respondents replied “strongly disagree” as per the standard for interpreting mean results that There is a mechanism to manage drivers. The mean score for the fourth item which is 3.68 with a standard deviation of 1.62 which shows the respondents replied “agree” that there are a well known driver abuse of resources and driver addiction. The mean score for the fifth item which is 2.44 with a standard deviation of 1.30 which shows the respondents replied “strongly disagree” that the driver has proper follow up on vehicle maintenance and repair schedule program. The mean score for the sixth item which is 2.68 with a standard deviation of 1.31 shows the respondents replied “strongly disagree” that the driver has proper recording of vehicle usage in the logbooks. The mean score for the last item which is 2.06 with a standard deviation of 1.04 which shows the respondents “strongly disagree” that the organization has fair

driver recruitment and selection procedures. Accordingly, majority of the respondents replied “agree” by mean score of 4.00 that there is lack of giving driver job related training program. According to Baas (2012) identified steps taken to improve driver management included, developing a comprehensive prestart check sheet, ensuring that drivers understand that they are responsible and accountable for their actions, improving driver recruitment procedures, including the use of pre-employment external assessments, requiring all new staff to complete a comprehensive in-house induction and training program (new staff remained under training until being assessed as fully competent by a qualified driver trainer) , educating and coaching drivers about vehicle standards and visual inspections, holding regular monthly driver forums , developing a culture where a driver can intervene in any unsafe or non-compliant act.

4.5 Unstructured Interview Questions and Analyses Results

The unstructured interview prepared to fleet managers and supervisor for the selected UN agencies. Based on the response, the researcher gives analysis as follows.

1. What are the major problems of vehicle maintenance and repair at your agency?

Based on the interview result of the respondents , the major challenges are vehicle maintenance and repair schedule problems, lack of getting genuine spare parts for maintenance and repair of vehicles, unplanned regular preventive and routine servicing of vehicles and lack of updating vehicle tracking sheet

2. What are the mechanisms to control and follow up on vehicle repair and maintenance at your agency?

Result of interview question shows that the mechanisms to control and follow up on vehicle repair and maintenance in relation to regular maintenance and servicing of vehicles for every 5000km odometer reading, proper vehicle movement tracking sheet and updated vehicle database regularly, follow up on vehicle movement notice board and tracking sheet.

3. How driver skills and knowledge being improved for the effectiveness of driver management at your Agency?

Based on the interview result of the respondents, knowledge being improved for the effectiveness of driver management in relation to have given regular job related training for drivers.

4. What are the possible mechanisms to control drivers' resource abuse practice under the selected UN agencies in Ethiopia?

As per their responses regarding for this questions, the mechanisms to control driver abuse of resources are periodically record and follow up in related to fuel usage and spare part. Therefore, the agencies are controlling this resources by producing weekly and monthly fuel consumption and vehicle tracking sheet report for each drivers.

5. What are the consequences of poor vehicle utilization and tracking affect fleet management and mechanisms in improving poor vehicle coordination and assignment practices at your agency?

Result of the interview question shows that the consequences of poor vehicle utilization and tracking affect fleet management practices in relation to inefficiency of fleet management department operations as well as the agencies, affected budget for vehicles, underutilization of vehicles, additional cost incurred for vehicles and lack of updating of vehicles in day to day operations . The mechanisms in improving poor vehicle coordination and assignment practices are developing a schedule of driver allocation regularly, vehicle movement history for each vehicle and establishing vehicle tracking sheet.

6. What are the mechanisms to make effective vehicles monitoring and tracking practice in selected UN agencies in Ethiopia?

Based on their responses, the mechanisms to make effective monitoring and tracking practices are establishing database administration in tracking vehicle maintenance and repair history for each vehicle, fuel consumption, annually vehicle insurance and annually vehicle inspection.

7. What are the major vehicle routing problems in the UN selected agencies in Ethiopia?

Based on the interview result of the respondents, the major vehicle routing problems in the selected agencies are lack of vehicle assignment activities, lack of planning, vehicle coordination problem, scarce resources, shortage of driver, shortage of vehicle, unplanned vehicle allocation, lack of updating vehicle tracking sheet and inability to manage transport service request

CHAPTER FIVE SUMMARY OF FINDINGS, CONCLUSIONS & RECOMMENDATIONS

5.1 Summary of Findings

The aim of this project was to assess fleet management practices in the case of UN selected organization place in Ethiopia. Questionnaires, interview and document analysis were employed to gather information. The questionnaires were distributed for the professional employees. All the questionnaires distributed were properly filled and returned except 8 questionnaires. Finally the study came up with the following major findings.

As per the table 4.5 found that the majority of the respondents replied “agree” that the organization faced a challenge of component failure and accidents of vehicles by the mean score of 3.68.

Table 4.6 mean results of the respondents in related to vehicle monitoring and tracking found that majority of the respondents replied “agree” that the organization has a problem of monitoring and tracking vehicles by mean score of 4.03.

Table 4.7 shows that the descriptive statistics of vehicle scheduling dimension of fleet management practices of the selected agencies and found that the majority of the respondents replied “agree” on the question stated that the organization has a problem of scheduling program by mean score of 3.88.

Table 4.8 in related to vehicle routing found that majority of respondents replied “strongly agree” on the question that the organization has a problem of vehicle routing by the mean scores of 4.03.

According to table 4.9, the majority of the respondents in related to driver management replied “agree” that there is lack of giving driver job related training by mean score of 4.00.

The major challenges of vehicle maintenance and repair are vehicle maintenance and repair schedule problems, lack of getting genuine spare parts for maintenance and repair of vehicles, unplanned regular preventive and routine servicing of vehicles and lack of updating vehicle tracking sheet.

The mechanisms to control driver abuse of resources are periodically record and follow up in related to fuel usage and spare part and also arranged job related training regularly to upgrade their skill and knowledge.

The mechanisms in monitoring or tracking vehicles are establishing database administration in tracking vehicle maintenance and repair history for each vehicle, fuel consumption, annually vehicle insurance and annually vehicle inspection

Finally, the major vehicle routing problems in the selected agencies are lack of vehicle assignment activities, lack of planning, vehicle coordination problem, scarce resources and shortage of driver

5.2 Conclusions

Based on the main findings above, the following conclusions are drawn. .

- There is no regular preventive and routine servicing of vehicles and faced problems of getting genuine spare parts for maintenance and repair of vehicles. This indicated that unsatisfactory performances and less efficiency in this respect. Therefore, the mechanisms to control and follow up on vehicle repair and maintenance in relation to regular maintenance and servicing of vehicles for every 5000km odometer reading, proper vehicle movement tracking sheet and updated vehicle database regularly, follow up on vehicle movement notice board and tracking sheet.
- There is no scheduling program for the selected agencies and therefore, the mechanisms in improving poor vehicle coordination and assignment practices are developing a schedule of driver allocation regularly, vehicle movement history for each vehicle and establishing vehicle tracking sheet. This indicated that, there are gaps in implementing those scheduling plans and guidelines. Moreover it is also found out that, the agencies lacks adequate and appropriate planning to avoid problems related to allocation of vehicles.
- There is lack of giving driver job related training and have driver abuse of resources for the selected agencies. This indicated that unsatisfactory performance and loss of organization resources. Therefore, the mechanisms to control driver abuse of resources are periodically record and follow up in related to fuel usage and spare part and also arranged job related training regularly to upgrade their skill and knowledge.
- There are no mechanisms to make effective monitoring and tracking practice are lack of using computerized monitoring and tracking system of vehicles and inability in using with current technology like GPS. This indicated that inefficiency in tracking that leads to negative impacts and poor performance of fleet department in the agencies. Therefore, the mechanisms in monitoring or tracking vehicles are establishing database administration in tracking vehicle

maintenance and repair history for each vehicle, fuel consumption, annually vehicle insurance and annually vehicle inspection

- There is a problem of vehicle routing for the selected agencies in related to lack of vehicle assignment activities, lack of planning, vehicle coordination problem, scares resources and shortage of driver. This indicated that there is unsatisfactory performance that leads to underutilization of vehicles in the fleet department
- The agencies are faced poor vehicle utilization and tracking affect fleet management practices in relation to inefficiency of fleet management department operations as well as the agencies, affected budget for vehicles, underutilization of vehicles, additional cost incurred for vehicles and lack of updating of vehicles in day to day operations.
- Finally, the study concludes that maintenance and repair servicing, scheduling, routing, monitoring and tracking and driver management influence fleet management to selected UN agencies in Ethiopia.

5.3 Recommendations

On the basis of the findings derived and conclusions drawn with regard to the assessment of fleet management practices in the case of UN selected organization, the following recommendations are made with the hope that implementation would alleviate or reduce the problem identified.

- The organization should develop proper maintenance and repair system of vehicles. The issue of vehicle maintenance and services are the very important fleet management activities in the case of UN selected agencies in relation to regular maintenance and servicing of vehicles for every 5000km odometer reading, proper vehicle movement tracking sheet and updated vehicle database regularly, follow up on vehicle movement notice board and tracking sheet

- The agency should steps taken to improve problem of regular preventive and routine servicing of vehicles. The agency should in place preventative maintenance, performed on schedule and have the vehicle serviced in a timely manner of preventive maintenance.
- The organization should have a mechanism to control and follow up on vehicle repair and maintenance in relation to regular maintenance and servicing of vehicles for every 5000 km odometer reading, proper vehicle movement tracking sheet and updated vehicle database regularly, follow up on vehicle movement notice board and tracking sheet.
- There agency should use of mechanisms of monitoring and tracking vehicle. In addition to this, the organization shall be used computerized monitoring and tracking system of vehicles. The organization shall also develop and implement current technology like GPS.
- The agencies shall develop a mechanisms to control driver abuse of resources are periodically record and follow up in related to fuel usage and spare part.
- The organization shall implement proper driver recruitment and selection procedures, improving driver recruitment procedures, including the use of pre-employment external assessments
- The agencies shall improve vehicle utilization and tracking efficiency of fleet management department operations in related to budget for vehicles, and updating of vehicles in day to day operations.
- Maintenance and repair servicing, scheduling, routing, monitoring and tracking and driver management was considered to be one of the important determinant factors and the agencies shall be considering the importance of the above factors in decision making process.
- Finally, the researcher recommend that other researchers in the case of selected agencies to conduct a more in depth study on the same or related topic of this study by using more preferably other methods of research or using other research designs.

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APPENDIX



ADDIS ABABA UNIVERSITY SCHOOL OF COMERCE GRADUATE PROGRAM

**LOGISTICS AND SUPPLY CHAINMANAGEMENT UNIT
MASTERS IN LOGISTICS & SUPPPLY CHAIN
MANAGEMENT**

QUESTIONNAIRE

This questionnaire is prepared and distributed to the employees of UN selected organization to get data for a study conducted for the partial fulfillment of MA Degree in Logistics and supply chain management.

The purpose of this research is to assess the practices of fleet management and its related problems, your response to the questionnaire is important for effective completion of this work.

The researcher, therefore, request you to provide us with relevant and accurate information. Besides, the researcher assure you that the information that you provide us will only be used for the purpose indicated above.

Thank you for your response.

INSTRUCTION

- There is no need of writing your name.
- Put tick (✓) in the boxes for question with choices.

PART ONE: Personal data

1. Sex

Male Female

2. Age

18 - 25 32-39 46-51
26 - 31 40 -45 Above 52

3. Educational Background

12 Complete Diploma MA degree & above
Certificate Degree

4. Position _____

5. Years of service in your profession _____

6. Salary Level

5000-10000 10001-15000
15001 - 20000 20001 - 25000
25001 and above

PART TWO: Questionnaires focusing to the practices and challenges of fleet management in the case of UN selected agencies.

Instruction: Put tick (✓) in the boxes for question with choices as per the key hereunder:

Key:- 5 = Strongly agree, 4 = Agree , 3 = Neutral , 2 = Disagree 1 = Strongly disagree

1.	Vehicle maintenance and repair	5	4	3	2	1
1.1	The organization has proper maintenance and repair scheduling system of vehicles.					
1.2	There is a problem of regular preventive and routine servicing of vehicles at your agency.					
1.3	The organization has a mechanism to follow up on regular services of vehicles.					
1.4	There are challenges encountered of vehicle maintenance and repair at your agency					
1.5	The organization faced a challenge of component failure and accidents of vehicles.					
1.6	The organization has faced problems of getting genuine spare parts for maintenance and repair of vehicles.					
2	Vehicle monitoring and tracking					
2.1	The organization has been using current technology like GPS .					
2.2	The organization faced problems of using computerized monitoring and tracking system of vehicles.					
2.3	There are mechanisms of monitoring and tracking vehicle at your agency.					
2.4	The organization has a problem of monitoring and tracking vehicles at your agency					
2.5	There are a system in improving vehicles tracking and monitoring system at your agency					

3.	Vehicle scheduling					
3.1	The organization has poor coordination and planning of vehicle assignment in day to day business operation.					
3.2	There are effective vehicle allocations to staff at the time of transport service request at your agency.					
3.3	There is a well-known underutilization of vehicles at your agency.					
3.4	There is vehicle database system of vehicle scheduling at your agency.					
3.5	The organization has a problem of vehicle scheduling programs.					
4	Vehicle routing					
4.1	There is a well-known underutilization of vehicles at your agency.					
4.2	The organization has a problem of vehicle routing at your agency.					
4.3	The organization has poor coordination and planning of vehicle assignment in day to day business operation					
5	Driver management					
5.1	There is lack of giving driver job related training program at your agency.					
5.2	The organization has unskilled driver manpower.					

5.3	There is a mechanism to manage drivers at your agency					
5.4	There are a well-known driver abuse of resources and driver addiction at your agency.					
5.5	The driver has proper follow up on vehicle maintenance and repair schedule program at your agency					
5.6	The driver has proper recording of vehicle usage in the logbooks at your agency.					
5.7	The organization has fair driver recruitment and selection procedures.					

Interview Questions

1. What are the major problems faced in day to day fleet management activities at your agency
2. What are the mechanisms to control and follow up on vehicle repair and maintenance at your agency?
3. How driver skills and knowledge being improved for the effectiveness of driver management at your Agency?
4. What are the possible mechanisms to control drivers' resource abuse practice under the selected UN agencies in Ethiopia?
5. What are the consequences of poor vehicle utilization and tracking affect fleet management and mechanisms in improving poor vehicle coordination and assignment practices at your agency?
6. What are the mechanisms to make effective vehicles monitoring and tracking practice in selected UN agencies in Ethiopia?
7. What are the major vehicle routing problems in the UN selected agencies in Ethiopia?

Thank you