



**Addis Ababa University School of Commerce Logistics & Supply Chain
Management Department**

**The effect of driver's performance on road transport operation: In
case of Unique Transport Cross Border Freight Association, Addis
Ababa, Ethiopia**

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ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

**Assessment on driver's performance effect on road transport operation: In
case of Unique Transport Cross Border Freight Association, Addis Ababa,
Ethiopia**

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DECLARATION

I the undersigned, hereby declared that this thesis paper represents my own original work, except where due acknowledgement is made and has not been previously submitted for any Degree qualification in this or any other University or Collage for academic credit. And that all sources of materials used for the study have been duly acknowledged.

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Acronyms and Abbreviations

ANOVA- Analysis of variance

VIF-Variance Inflation Factor

SPSS- Statistical Package for the Social Sciences

UNCTAD- United Nations Conference on Trade and Development

NTSB- National Transportation Safety Board

WFP- World Food Program

DRVBEHV- Driver's behavior

DRIVSKL-Drivers skill

DRIVHEL-Drivers health

DRIVEFAT-Drivers fatigue

Abstract

History of transportation dates back to the medieval period through the use of domestic animals which are used in transporting heavier loads or humans riding animals for easy conveyance and speed. The industrial revolution in the nineteenth century saw various inventions which changed the phase and means of transportation such as telegraphy. Means of communication became a necessity and independent of the transport of physical objects. Road transport is an essential part of the transport system and the most common form of transport. Road transport is vital to the economic development and social integration of the country. However this sector has face different problems, therefore the study investigates the effect of driver's performance on road transport operation with reference to Unique Transport Cross Border Freight Association, Addis Ababa, Ethiopia. The objective of the study was to investigate drivers behavior, skill, health, and fatigue influence on road transport operation in unique transport cross borders. A survey was conducted by drawing sample size of 126 from a target population of 175 by using simple random sampling. The researcher used structured questionnaires to collect data. The relationships proposed in the framework were tested using Pearson correlation, and the causal relations were analyzed using regression analysis. And the research has found drivers behavior, driver's skill, driver's health and drivers fatigue has a positive and significant influence on road transport operation

Key Words: driver's performance, road transport operation

CHAPTER ONE

INTRODUCTION

1.1Background of the study

Background of the organization

History of transportation dates back to the medieval period through the use of domestic animals which are used in transporting heavier loads or humans riding animals for easy conveyance and speed. The industrial revolution in the nineteenth century saw various inventions which changed the phase and means of transportation such as telegraphy. Means of communication became a necessity and independent of the transport of physical objects.

Road transport is an essential part of the transport system, and the most common form of transport. Road transport is vital to the economic development and social integration of the country. Easy accessibility, flexibility of operations, door to door service and reliability have earned road transport an increasingly higher share of both passenger and traffic than other modes of transport. The most challenging part of road transport is the accidents which occur on road, as road transport is prone to road accidents. It's not reliable as rail transport in the movement of goods. The movement of goods and services depends on the mode of transport; road transport is slow compared to other modes of transport (P. Toth and D. Vigo, 2014).

Transporting is required in the whole production procedures, from manufacturing to Delivery to the final consumer's and returns. Only a good coordination between each

Component would bring the benefits to a maximum. Since transporting is one of the important things in logistics a well structured transporting is vital to the operation. Today, logistics executives must deal with new challenges requiring minute-by-minute

Tracking in all parts of the world, developing cost efficiencies while guaranteeing timely delivery, and anticipating problems and having back-up plans.(Tracy, 2004) Without well developed transportation systems, logistics could not bring its advantages into Full play besides, a good transport system in logistics activities could provide better logistics Efficiency, reduces operation cost, and promotes service quality. The improvements of Transportation systems need the effort from both public and private sectors. A well operated Logistics system could increase both the competitiveness of the government and enterprises.(Tracy, 2004).

Several authors (De Gruyter, Currie & Rose, 2016; Kolosz & Grant-Muller, 2016) have focused their sustainability studies on transport processes owing to its impact on today's world. According to the United Nations Conference on Trade and Development (UNCTAD), sustainable freight transport systems entail, among other features, “the ability to provide transportation that is safe, socially inclusive, accessible, reliable, affordable, fuel-efficient, environmentally friendly, low-carbon, and resilient to shocks and disruptions, including those caused by climate change and natural disasters” (UNCTAD, 2015). It can be seen that several terms included in this definition are closely related to the triple bottom line approach. In the process of searching for a more sustainable transport model, best practices related to road transport have a vital role. This is due to the fact that road transport is the most common transport mode. According to EUROSTAT, almost 50% of the ton-kilometers transported within the EU in 2014 were transported by road (EUROSTAT, 2016). This information leads us to believe that sustainable initiatives in this area are relevant.

In spite of the importance of best practices in road transport, we are not aware of any empirical study in literature that indicates which sustainable initiatives companies adopt most frequently. This gap is even more critical if we consider the limited approach provided by literature in economic and social sustainability practices

1.2 Statement of the problem

Road transport is an essential part of the transport system and the most common form of transport. Road transport is vital to the economic development and social integration of the country, easy accessibility, flexibility of operations, door to door services and reliability have earned road transportation increasingly higher share of both passengers and traffic vis a vis than other modes of transport (Google search).

Trucks are a cost effective mode of distribution of valuable goods for short distance, their tariffs are competitive with higher efficiency compared to rail way transportation (Google search).

The trucking industry is the backbone of transportation and logistics sector (Londoño-Kent, 2009) with a vital role in developing economies, especially in land locked countries , although this remains a largely unorganized sector (Parkan and Dubey, 2009).

The steep rise in contributions in the field of sustainable transportation demonstrates active debate in this area (Black, 1996; Steg and Gifford, 2005; Litman and Burwell, 2006; Shafiee and Topal, 2009; Amekudzi et al., 2009; Eyring et al., 2010; Rogers and Weber, 2011; Lai et al., 2013), especially related to drivers performance impact on road transport and its operation and drivers management problems of support staff's quality of drivers skills. However, there remains scant empirical research which critically focuses on drivers performance influence on road transport operation.

The most comprehensive research undertaken into the effects of driver fatigue has been carried out in the USA. A series of studies by the National Transportation Safety Board (NTSB) has pointed to the significance of sleepiness as a factor in accidents involving heavy vehicles.

In Europe, the evidence is less comprehensive, and often involves retrospective accounts of fatigue involvement which are likely to underestimate its impact. Research undertaken in some Member States indicates that driver fatigue is a significant factor in approximately 20% of commercial transport crashes. The results from various surveys carried out at different times; show over 50% of long-haul drivers have at some time fallen asleep at the wheel. The ongoing driver shortage is by far the most significant challenge facing the road transport sector in 2018 and a growing cause for concern amongst logistics operations according to the findings of (Paragon Software Systems, annual UK customer survey, 2018).

To further corroborate my data I have undertaken review of extant literature, identifying many gaps which require urgent attention, and also in my personal view point this area of study has many gaps in our country and the organization I have under taking the study, even if the organization has not perform any research related with drivers performance directly as the staff members tell there are so many problems happened in the organization because of drivers related problems. As I identified with an interview done with Unique Transport Cross Border Freight Association employee and some of management members, the company has faced different problem because of drivers related problems and difficulty of management, and from the letter written on august, 6,2018 from WFP in collaboration with the federal road transport authority which is held in capital hotel to develop drivers knowledge related with driver health, behavioral,

skills, fuel efficiency and this shows that there is a problem related with drivers and their effects on road transport operation.

1.3 Objective of the study

1.3.1 The General Objective of the Study

- The general objective of the study is to investigate driver's performance effect on road transport operation Of Unique Transport Cross Border Freight Association, Addis Ababa, Ethiopia by conducting a comprehensive literature review on the impact drivers health , behavior's, skills, fatigue on drivers performance.

1.3.2 The specific objectives of the study are:

- To identify drivers skill effect on performance of drivers in the organization.
- To examine drivers behavior effect on effective road transport.
- To investigate the drivers health effect on drivers performance.
- To examine drivers fatigue effect on drivers performance.
- To show the relationship between drivers performance and road transport operation.

1.4 Research questions

This research has been initiated to seek answers for the following basic questions

- How do driver's skills affect their performance?
- How driver's behaviors can create drivers performance?
- How do drivers health relate with drivers performance?
- How drivers fatigue relate with drivers performance?
- What is the relationship between driver's performance and road transport?

1.5 Significance of the study

In countries like Ethiopia where it is land locked and there is high need in transports other than water related transportation road transport has playing a very important role. In this condition the effectiveness of the operation plays a great role because today's competitive environment growing market demands effectiveness. Therefore this study attempted to identify the major factors that influence the performance of road transport based on driver's perception. Hence, the study can be useful in creating a clear understanding about the influence of driver's performance on the road transport operation. Then, the organization can able to identify the reasons of low driver's performance and to provide solutions for those problems.

1.6 Scope of the study

The study I focused on assessing driver's performance influence on road transport operation in Unique Transport Cross Border and Freight Forwarding by identifying factors or problems that hinder drivers from playing a significance role in the operation. The study focused on driver's performance related things and their influence on road transport operations within the parameters and methodologies of the paper employing. And the study focused only driver's performance measurement from some measurement points, skill, driver's fatigue, drivers' health, driver's behavior related with (drug taking, alcohol, and financial position) problems on the boundary from Djibouti to Addis Ababa, Ethiopia. Because of time and budget constraints again the study takes one transport association company which has different members under it "Unique Transport Cross Border and Freight Forwarding".

1.7 Limitation of the study

The limitation of the study was the accessibility of the required data as much studies has not been conducted in the area of driver's related problem and their influence on the road transport.

The researcher was tried to overcome the problems by

1.8 Definition of terms and concepts

- **Trucks:** a large, heavy road vehicle used for carrying goods, materials or troops. Any of various forms of vehicle for carrying goods and materials, usually consisting of a single self-propelled unit but also often composed of trailer vehicle hauled by a tractor unit.
- **Freight:** goods that are transported by ship, aircraft, train, or truck, or the method of transporting these goods.
- **Cross border:** between different countries, or involving people or businesses from different countries.

1.9 Organization of the study

The research paper has consists of five chapters and it is organized as follows. The first chapter is an introductory part in which back ground of the study, statement of the problem, basic research questions, objective of the study, definition of terms, significance of the study, and scope of the study is presented. Chapter two presented review of both theoretical and empirical literatures subsequently; methods of the study are presented in chapter three. Then chapter four summarized and discussed the findings of the study, finally, on chapter five, the main findings of

the study summarized and conclusion's was drawn based on the results of the study. And at last the study forwarded appropriate recommendation and policy implications.

CHAPTER TWO

Literature review

2.1 Theoretical literature

2.1.1 Concepts and Definition of drivers and road transport

There are different definitions of drivers, according to Webster's dictionary driver is "a person who drives a truck as a means of earning a living." Truck drivers provide an essential service to industrialized societies by transporting finished goods and raw materials over land, typically to and from manufacturing plants, retail and distribution centers. Truck drivers are also responsible for inspecting all their vehicles for mechanical items or issues relating to safe operation. Others, such as driver/sales workers, are also responsible for sales, completing additional services such as cleaning, preparation and entertaining (such as cooking and making hot drinks) and customer service. Truck driving is a profession that is vital to the economy of every country, yet it is a career about which most people know very little, report that surveys of the general public indicate that most people are ambivalent about truck driving and view it as a dead-end profession requiring little intelligence or skill. Nonetheless, people all over the world are dependent upon truck drivers one way or the other, and the work they perform. Manufactured goods from different parts of the world and within the country are moved to final destinations by long haul truckers (Larsen, 2004).

There are three major types of truck driver employment according to economic times (2017)

- **Owner-operators** (also known as O/os, or "double stuffs") are individuals who own the trucks they drive and can either lease their trucks by contract with a trucking company to haul freight for that company using their own trucks, or they haul loads for a number of companies and are self-employed independent contractors. There are also ones that lease a truck from a company and make payments on it to buy it in two to five years.
- **Company drivers** are employees of a particular trucking company and drive trucks provided by their employer.
- **Independent Owner-Operators** are those who own their own authority to haul goods and often drive their own truck, possibly owning a small fleet anywhere from 1-10 trucks, maybe as few as only 2 or 3 trucks.

Webster (2017) describes transportation as an act, process or instance of transporting or being transported, means of conveyance or travel from one place to the other, public conveyance of passengers or goods especially as a commercial enterprise.

According to Economic times (2017) road transport is described as a means of transporting goods and personnel from one place to the other on roads. Road is a route between two destinations which has been either paved or worked on to enable transportation by way of motorized and carriages.

The key advantages of road transport are the provision of door to door service which reduces cartage, loading and unloading which helps as a means of cost reduction. Road transport is the most suitable means of delivery of goods in rural, towns, villages where other means of transport

are not reachable. Sport can be classified as transporting or movements of goods, materials or people. (John j.zogby. transportation safety management systems)

The function of the road, from a freight perspective, is manifold. It is used for small shipments over short distances as well as their counterparts. Road freight is most often necessary in the beginning and in the end of the multimodal transport chain (first/last mile logistics). Furthermore, road freight is the only mode involved in many door-to-door freight chains, as it is usually the only mode involved. Such a chain might constitute one or several truck movements (The Swedish Transport Administration, Kruthusgatan 17, 405 33 Göteborg, Sweden)

2.2 Empirical literature

The transport system is often described as the lifeblood system of modern society. Roads constitute a fundamental part of this system for both passenger and freight transports. Freight transport is expected to increase throughout Europe by 80% until 2050(EU, 2011). ITF (2015) stated that international freight transport to ports will increase fourfold until 2050. This will, ceteris paribus, result in a severe increase of congestion and incidents. In turn, incidents will worsen congestion even more.

Alan (2006) says road transport has a near monopoly in the distribution of finished products at the lower levels of the supply chain, particularly in the delivery of retail supplies. In his study, it is distribution at this level which would be most severely disrupted by the absence of trucks and which would have the greatest impact on consumers. There is a dominating opinion that the implementation of a cost reduction strategy will necessarily result in lower sale prices of goods and services (Aurimas and Boris, 2009).

Professional truck drivers (TDs) work in stressful conditions that favor unhealthy lifestyles and Medical disorders. Their overall health, and especially their mental health, is very often worse Than the general population as a consequence of long driving shifts, disrupted sleep patterns, Chronic fatigue, social isolation, compelling service duties, delivery urgency, job strain, low rewards, and unsystematic medical control. Indeed TDs, especially those who drive long-haul routes, face a multitude of mental health-related risks attributed to the transportation environment such as, in addition to those indicated above: spending many consecutive days away from home and family. **(Sergio Garbarino, Ottavia Guglielmi , Walter G Sannita , Nicola Magnavita and Paola Lanteri).**

Professional truck driving is a major cause for occupational stress, sleeping on irregular schedules, subjective fatigue, low access to and limited attention from public or private healthcare, and scanty opportunities for social support. Workers in this large and growing occupational segment are at risk for a range of occupation-induced conditions in which the detrimental combination of mental health problems and sleep disorders may impact severely (Chopra & Meindl 2007, 385).

2.2.1 Satisfaction and frustration of long distance truck driving

Satisfaction may be regarded as the ultimate source of motivation to choose and remain in a tough profession like truck driving; conversely, frustration from various sources may prevent one selecting truck driving as a profession. Here, we explore possible sources of satisfaction and frustration using a critical review of extant literature. According to Johnson et al. (2009), sources of satisfaction include self-dependence, opportunity to travel, decent income, and most importantly the pleasure of driving; while sources of frustration include being away from home, rising fuel prices, lack of proper training, local government pressures and issues around loading and unloading. Williams and George (2013) adopted the appreciative inquiry (AI) method to reveal the factors which determine the degree of satisfaction among the truck drivers' community. Their study found that important satisfaction factors are: passion for driving, opportunity to travel, and the independent nature of the job. Major deterrent factors are: boredom, poor job respect and stress resulting from long driving. These observations corroborate Johnson et al.'s (2009) findings. Spielholz et al. (2008) explored the level of risk associated with long distance truck driving, and Shibuya et al. (2010) quantified specific risks associated with loading and unloading activities. These findings indicate that truck driver's needs different skills to handle work-related stress and avoid frequent injuries (Spielholz et al., 2008; Shibuya et al., 2010).

Appropriate training may eliminate some of the discomfort factors (long working hours, long absence from home and high risk of injury) which lead to frustration among truck drivers (Beilock and Capelle, 1990).

However, it may also be observed that drivers lack sensitivity towards environment and society, as reflected in their casual approach, and therefore need skills which prepare them to become

more environmentally aware. Developing the necessary skills set will help position truck drivers as the most important link in a sustainable supply chain network (own completion).

2.2.2 Traits and skills needed for sustainable transportation and logistics

We have attempted to answer this question using appreciative enquiry (AI), a qualitative research method that focuses on interpreting the meanings, purposes, and intentions of people who share their feelings and experiences. In (PT) our study, due to insufficient literature focusing on the traits and skills of a truck driver in the context of sustainable supply chain networks, a qualitative methodology is appropriate (Williams and George, 2013). AI, termed a discipline of positive change, has emerged in recent years as one of the most respected qualitative research technique (Cooperrider et al., 2008).

We conducted studies at various locations in India, spending time with state police, who are responsible for monitoring truck emissions, age, condition, and traffic laws; drivers themselves; and ten different police commissioners and deputy commissioners in Nashik, Pune, Mumbai, Kolkata and Delhi. We asked their opinion about recent challenges in terms of carbon emissions; their perceptions of drivers' quality of life; the extent to which drivers are responsive towards environmental practices; and what traits and skills a driver should possess.

2.2.3 Traits of a truck driver

The following are skills set of truck driver:

(i) Maturity

Maturity is an important criterion, supported by extant literature (Min and Emam, 2003; Suzuki et al., 2009; Williams et al., 2011). Mature truck drivers respect local government rules and generally take more responsibility for environmental practices like regular engine cleaning, proper maintenance and driving within speed limits, whereas younger drivers are more

irresponsible and enjoy breaking rules (Min and Emam, 2003; Suszuki et al., 2009; Williams et al., 2011; Saldanha et al., 2013; Williams and George, 2013).

(ii) Education level

Education level is an important criterion that differentiates responsible from irresponsible truck drivers. According to senior police officers, most truck drivers are not even high school graduates. A lack of proper scrutiny over how drivers obtain their heavy vehicle licenses was reported. However, there was a belief that tightening up on this could lead to an acute shortage of truck drivers. We also identified a lack of respect among Indians towards the truck driving profession. (Saldanha et al., 2013; Williams and George, 2013); in fact, in Western countries truck driving professions are well respected. This could be linked to country culture, which may further impact on driver education level (Min and Emam, 2003). Education may be regarded as a major constraint in India due to popular perception of truck driving.

Endurance, Endurance is regarded as a key criterion for determining the longevity of a driver, as poor endurance may lead to frustration (Min and Emam, 2003; Williams and George, 2013). Our AI suggested that endurance may be linked to drivers' demographic profiles (age, educational background, and experience), socioeconomic status, and Indian culture by state. Experienced drivers with proper training from Indian states like Punjab, Bihar and UP tend to have more endurance than those with less experience from states like West Bengal, Kerala and Assam.

2.2.4 Skills of a truck driver

(i) Technical knowledge

Technical knowledge includes basic automobile engineering, fundamentals of logistics and transportation and basic instrumentation awareness for environmental testing and basic engine diagnostics and maintenance. These AI findings are corroborated by extant literature (Kuncy     et al., 2003; Raftery et al., 2008) and this is an area that needs urgent attention. Indian truck drivers almost entirely lack the skills set of U.S. drivers (Williams and George, 2013), possibly due to lack of proper motor training schools or institutes.

(ii) Behavioral skills

The AI reveals that due to poor communication skills and inappropriate attitudes, drivers often end up in direct confrontation with regulatory authorities in a large country where different languages are spoken. Truck drivers from states like Punjab, Bihar and UP and are well conversant in Hindi, but find it difficult to communicate in the South (Tamil Nadu, Andhra Pradesh and Kerala) where English is more widespread.

The improvement of transport operations has been traditionally approached with the use of mathematical modeling, operations research, and simulation methods (Sternberg et al., 2013). Under these, several classical transportation problems that include the vehicle scheduling problem (e.g. Zhang et al., 2014; Eliiyi et al., 2009), the delivery problem (e.g. Urban, 2006; Mitrovic-Minic et al., 2004), the transportation problem (e.g. Yu et al., 2015; Faulin, 2003; Zhang and Yun, 2009), the vehicle routing problem (e.g. Yu et al., 2013; Lam and Mittenthal, 2013; Kumar et al. 2011; Mishra et al. 2011; Marinakis and Marinaki, 2008; Zhong et al., 2007)

Motor transportation is the most flexible means of transportation as it allows door to door delivery of goods and services between cities, towns, and where all other means or mode of transportation cannot access. The movement of bulky goods of various sizes associated with long distance journey can be done through road transport. The combinations of flexibility and versatility of motor transport has enabled it to become the most preferred in the world (Stock & Lambert 2001, 326.)

The steep rise in contributions in the field of sustainable transportation demonstrates active debate. In this area (Black, 1996; Steg and Gifford, 2005; Littman and Burwell, 2006; Shafiee and Topal, 2009; Amekudzie et al., 2009; Eyring et al., 2010; Rogers and Weber, 2011; Lai et al., 2013), especially related to environmental impacts and drivers and support staffs quality of life.

The trucking industry is the backbone of transportation and logistics sector (Londono-Kent, 2009) with a vital role in developing economies, especially in land locked countries, although this remains a largely unorganized sector (Parkan and Dubey, 2009).

Road transport according to Economic times (2017) road transport is described as a means of transporting goods and personnel from one place to the other on roads. Road is a route between two destinations which has been either paved or worked on to enable transportation by way of motorized and carriages. Road transport can be classified as transporting or movements of goods, materials or people. The major advantage that road transport has over other means transportation is that it enables to deliver goods and services door-to-door of goods and materials or transporting of people. Road transport at times is the only medium of transportation of people and goods and services in rural areas where other means of transportation such as rail, water, and air don't have access to. Delivery of goods and services between small villages, towns, and cities

is made possible through road transport. Road transport also has its limitation which will be discussed properly in the next chapter. For instance, road transport has been attributed to road accidents which occur due to either man made fault or climatic conditions. Road transport isn't that safe compared to other means of transport, as it's irregular and undependable. Transporting of bulky goods through road transport over a long distance is unsuitable and costly. (Economic times 2017).

2.2.5 Advantages and disadvantages of road transport

Road transport is the most popular mode of transport or use of transport in the movement of goods and services in Finland. Many transport companies are into delivery of goods during the schedule period depending on the customer needs and satisfaction (Next generation 2017).

The key advantages of road transport are the provision of door to door service which reduces cartage, loading and unloading which helps as a means of cost reduction. Road transport is the most suitable means of delivery of goods in rural, towns, villages where other means of transport are not reachable. Road transport is a compound business which allows and requires most transport companies to own transport vehicle used in the transport business, it requires less capital. 11 The cost of operation, cost of maintenance is less compared to other modes of transport; it's the most suitable means of transport in delivering of bulky goods over long distance. It also has a lesser risk of damaging goods in transport and most suitable cheapest mode of transport for short distance in the delivery of goods and services. The most challenging part of road transport is the accidents which occur on road, as road transport is prone to road accidents. It's not reliable as rail transport in the movement of goods. The movement of goods and services depends on the speed of the mode of transport, road transport is slow compared to other mode of

transport, climatic conditions tend to dictate and create challenges for road transport (google article library 2017).

Safety on the road compares to health as a major issue, with some of the TDs problems potentially affecting road safety. Adequate levels of vigilance and focused attention are in fact necessary when driving and sleep disorders or inadequate sleeping become crucial in this respect because of the resulting excessive sleepiness during the day. Sleep disorders are often co-morbid: for instance, obesity and the metabolic syndrome are strongly associated with sleep disorders such as the obstructive sleep apnea (OSA), which per se causes excessive daytime sleepiness and is associated with a 2-to-8 times increased risk of accidents . The risk increases further (55%) among obese drivers of heavy commercial vehicles compared with TDs with normal weight. The associated use of medications (either prescribed or self-administered), alcohol and/or amphetamines increase the risk of accidents (*International Journal of Environmental Research and Public Health*).

National aeronautics and space agency (2011) describes climate as the average climatic condition over a long period of time. Climate change can therefore be a typical average weather condition of a region which could be a change in average annual rainfall or change in a city's average temperature for a given month or period or precipitation pattern. Climate change is a global challenge as it affects road transportation. Weather conditions such as snow, wind, humidity, and rain have so many adverse effects on conveyance of goods, people and products from one location to the other through road (Akinsanya Adeola James, 2018).

The flexible service offered by trucks and, partly, made possible by the roads constitutes a blessing as well as a curse to society. The increased value of the goods, and thereby customer satisfaction, brought by the logistic solution can be found in the two dimensions of time and

place (Coyle et al, 2013). Road freight has many positive aspects in terms of making products available, increasing employment, etc. (IRU, 2015). However it also brings severe negative consequences in terms of environmental aspects, traffic safety and economic costs to society (see for instance ITF Transport Outlook 2015).

Trucks are not suitable for moving freight over very long distances. Generally the costs are too high for bulky goods in combination with long distances (Beuthe et al, 2001). It should also be understood that the speed of the service is normally good but sometimes it falls short and cannot satisfy customer demands.

2.3 Gap analysis

As many researches has found and concluded road transport and drivers are un separated issues. As road transport is the main means of modern transport of human and goods it is the most easiest and assessable. As researchers found the modern logistics and supply chain world has a very much dependency on road transport. As I identified from all of those literatures the researchers are failed to identify the roles of the drivers to the road transport operation and to give views on performance of drivers of vehicles. My research will narrow the gap that is happened in the past researches, because my research is mainly focused on driver's performance effects on the road transport operation. Many have been said about road transport so that my research will add some points about driver's performancet.

2.4 Conceptual framework of the study

The study focuses on assessing driver's performance and their influence on road transport operation of Unique Transport Cross Border Freight Association, Addis Ababa, Ethiopia. It has

independent variable that will investigate against dependent variable. Independent variable use of driver's performance by making bench mark key performance indicators adapted from different literature, then examined its effect on road transport operation. The following figure clarifies the number of factors and relationship with the road transport operation.

Conceptual framework assessing the effect of driver's performance on road transport operation in Unique Transport Cross Border Freight Association, Addis Ababa, Ethiopia.

Driver's performance measurement variables

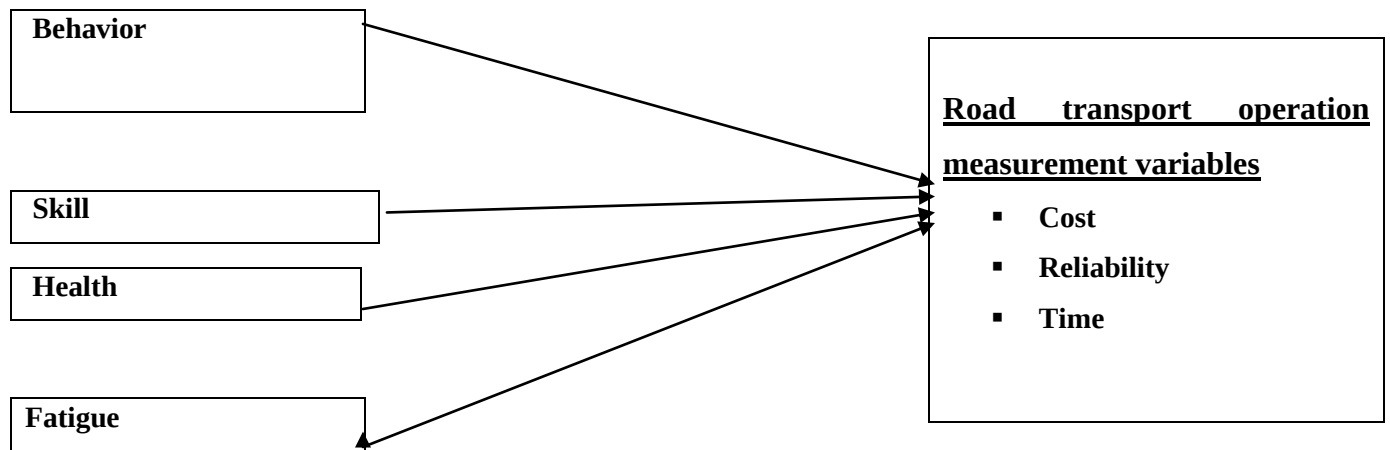


Fig 2.1. Conceptual model for driver's performance effect on road transport

Source : own survey 2019

CHAPTER THREE

Research Methodology

3.1 Description of the study area

The methodology for empirically assessing driver's performance and their influence on road transport operation which is the case of Unique Transport Cross Border Freight Association which is an association of different transport companies located in Addis Ababa Ethiopia, and gives transportation service from the Djibouti port to Addis Ababa. This study will conduct only within this boundary so that the population of the study to conduct questionnaire to develop primary data is from one of the member companies, Transport Company, Transit Service Company and the office of Federal Transport Minister to indicate their feeling and challenges that they are facing with drivers. Most researches are conducted in road transport however; as drivers are related with road transport this study will adopt important characteristics from road transport researches.

3.2 Design of the Study

The research design is explanatory cause and effect as well as descriptive which is conducted on drivers performance effect on road transport operation in case of unique transport cross border freight association, as explanatory research helps to see the relationship between variables.

3.3 Population of the study

According to Alan S. Kaufman and Nadeen I. Kaufman, (2005), population is a group of individuals, objects, items or is an entire group of persons, or elements that have at least one common thing in common. The target population of this study is 163 which consists transport related organizations and transport authority and importer, exporter and a transit company and selected drivers.

3.4 Data type

In order to conduct the study, quantitative types of data was used to get sufficient information. The data will be collected by conducting questionnaire from different transport related companies.

3.5 Unit of Analysis

In this study, unique transport cross border freight association, Addis Ababa, Ethiopia is a unit analysis as it was assessed the road transport operation. Therefore, employees of the company was taken as a unit of analysis

3.6 Sampling and sample size determination

A representative sample for questionnaire was selected from the employees of the transport company, transistors' (customs clearing agent) based on probability sampling of simple random sampling. When each entity of the population has definite non zero probability of being incorporated into the sample is known as a probability sample. According to Taro Yamane's

(1973), this study applied a simplified formula to determine the required sample size at 95% confidence level, and allowed error = 0.05% and number of employees who work with in the selected organizations are 163.

$$126 = \frac{163}{1 + 163(0.05)^2}$$

$$126 = \frac{163}{1 + 163(0.05)^2}$$

Where ‘n’ is the sample size by substituting the numbers into the Yamane formula, the numbers of sample is 115. in order to increase the response rate, the researcher has increased the sample size to 126 (by adding ten percent of the sample size) persons.

In order to identify drivers performance perceived determinants of driver’s performance influences on road transport operations the study used simple random sampling method in which all the members of the population has equal chances of being selected. The following table shows that the number of selected target population this is done because of time and other constraints.

Type of organization	Number of selected member
Transport association	100
Drivers	33
Transport authority	10
Transit company	10
Importer	5
Exporter	5
Total	163

3.7 Data type and source

The type of data that was collected includes both primary and secondary data type. For the primary data the instrument which will be applied is questionnaire. On the other hand for the secondary data review of different manuals, journals related with drivers and road transport and more focus has been given for information related with driver management challenges in unique transport cross border freight association. The primary data was collected from members from Transport Company, from Transit Company, and from transport authority.

3.8 Methods of data collection

Primary data collected by using questionnaire. The primary data are those which are collected afresh and for the first time, and thus happen to be original in character, and then we can obtain primary data either through observation or through direct communication with respondents in one form or another.

A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms. The respondents have to answer the questions on their own. The questionnaire was presented to the respondents in person.

The secondary data collected through depth review of documents. Secondary data may either be published data or unpublished data (C.R.kothari research methodology, methods and techniques).

3.9 Method of data analysis

The analysis part of the study was carried out in clear and better manner as much as possible to examine the effect of driver's performance on road transport operation.

Analysis of data in this research was done by using statistical tools like regression and correlation models. Regression analysis (Multiple Regression) was used to know by how much the independent variable i.e. drivers performance explains or influences the dependent variable which is road transport operation. Pearson's correlation analysis also conducted to measure the strength of the association between drivers performance and road transport operation. In addition, descriptive analysis (tables, mean and standard deviation) used to analyze drivers performance indicators and for the demographic factors such as respondents educational qualification, position, experience within the organization and department. Data analysis was performed by using SPSS software.

3.10 Validity and Reliability

Reliability: According to Zikmund et al (2010) cronbach's alpha is a measure for the internal consistency of items to the concept. Scales with coefficient alpha between 0.8 and 0.95 are considered to have very good reliability, scales with coefficient alpha between 0.7 and 0.8 are considered to have good reliability and coefficient alpha between 0.6 and 0.7 indicates fair reliability.

After collection of the data using the appropriate instrument i.e. questionnaire, it was properly edited, coded, measured by nominal, ordinal and ratio scale.

Table 3.1 Reliability test result for the questionnaire

Item	Number of item	Cronbach's Alpha	Result
Drivers behavior	4	0.728	Good
Drivers skill	5	0.706	Good
Drivers health	4	0.703	Good
Drivers fatigue	2	0.709	Good
Road transport operation	5	0.702	Good

Source: Own Survey Data, 2019

3.10.1 Descriptive analysis

Descriptive analysis is an insight into the past. This statistical technique does exactly what the name suggests “describe”. It looks at data and analyzes past events and situations for getting an idea of how to approach the future. Descriptive analytics looks at past/historical performance to understand the reasons behind past failure or success.

3.11. Ethical consideration

The study of Leedy & Ormrod (2010) shows that there are certain ethical issues that must be kept when undertaking a research. The researcher addressed ethical consideration of confidentiality and privacy. In such case conscious and care full effort was made at all time to sustain the promise and the researcher takes every precaution to maintain the anonymity of the study participants. All participants expressed by using different codes instead of writing their names this was helpful the participants to full express their idea.

CHAPTER FOUR

RESULT, INTERPRETATION AND DISCUSSION

4.1 INTRODUCTION

This chapter presents an analysis of data collected and discusses the findings on the effect of driver's performance on road transport operation of Unique Transport Cross Border and Freight Forwarding.

The data was analyzed using Statistical Package for Social Science (SPSS v.20). Based on the methodologies, research design and tools of the proposal. Descriptive statistics were used for demographic factors and drivers related ideas and Practices. Also the study used Correlation analysis, specifically Pearson correlation to measure the degree of association between different variables under consideration used. Regression analysis was also used to test the effect of independent variable on dependent variable.

4.2 RESPONSE RATE

Even if 126 questionnaires distributed only 121 of them could be returned back from the respondents. The returned questionnaire was large enough to draw analysis. Actually, not all responses analyzed, five responses were found incomplete and rejected from analysis at coding (editing) stage.

4.3 Descriptive Statistics

4.3.1 Socio-Demographic Information

Observing the demographic trend or characteristics of our sample population before starting the data analysis is useful to make the analysis more meaningful for the reader. This part of the questionnaire requested limited amount of information related to personal and demographic status of respondents. The purpose of demographic analysis in this research is to describe the characteristics of the sample such as proportion of male and female in the sample, department of respondents, academic qualification of respondents and experience of respondents. Accordingly these variables are summarized and described in tables shown below.

Table 4.1 Demographic Characteristics of Respondents

Variable		Frequency	Percent	Valid percent	cumulative percent
Gender of respondents	Male	72	59.5	59.5	59.5
	Female	49	40.5	40.5	100
	Total	121	100	100	
Educational background	Diploma	21	17.4	17.4	17.4
	BA degree	73	60.3	60.3	77.7
	Masters	27	20.3	20.3	
	Other	0	0	0	0
	Total	121	100	100	100
Work Experience	<1 year	6	5	5	5
	1-5 years	41	33.9	33.9	38.8
	6-10 years	57	47.1	47.1	86
	>10 years	17	14	14	100
	Total	121	100	100	
Type of organization	Importer/Exporter	30	24.8	24.8	66.9
	Customs clearing agent	30	24.8	24.8	91.7
	Transport Authority	10	8.3	8.3	
	Total	121	100	100	100
Position in the organization	Senior level manager	17	14	14	14
	Middle level manager	56	46.3	46.3	60.3
	Lower level manager	39	32.2	32.2	92.6
	Other	9	7.4	7.4	100
	Total	121	100	100	

Source: Own Survey Data, 2019

As the above table depicts the gender distribution of the respondents in the study covers (59.5%) Male and (40.5%) of them are Female respectively. This implies that respondent of the research questionnaire is dominated by Male respondents. Those respondents participated in the study have different educational background as the researcher found out; Most of them (60.3%) were a graduate of first degree and (22.3%) of them were graduates' of second degree. Those who had diploma were accounts (17.4%) out of the whole population. Unfortunately there were found no respondents within the category of "other".

According to the survey data collected most of the respondents were working in the middle level management position, which are 46.3% of the total respondents. More over 32.2% of the respondents are working in the lower level management. Senior level management workers also participate in the survey which accounts of 14.0%. The least respondents were found in the category that the researcher is named "other" which is 7.4% of the total population.

With regard to work experience of the respondents 5.0% of the respondents have less than one year experience. There are respondents which have a work experience of between one and five years which accounts of 33.9% of the respondents. Most of the respondents of the questionnaire distributed were those who have an experience of between six and ten years, these are accounts from the total respondents 47.1%. Unfortunately there are only few persons who have experience of greater than ten years from the total respondents which are 14% of the whole respondents.

The survey was also indicating the organization type that respondents work in, because the questionnaire was distributed in three different organizations. According to the survey collected about 42.1% of respondents work in the transport organization which is the case company for the researcher. Surprisingly the result from the two other organizations is same which 24.8% of the

total population. Results found from Transport authority account 8.3% of the total population. Based on the survey data collected background of work, education, experience and other backgrounds are related with the operation.

4.3.2 Analysis of driver's performance

4.3.2.1 Driver's Behavior

Table 4.2 Descriptive analysis on driver's behavior

Variable	Question items					Std.deviation
			Frequency	percent	mean	
Drivers Behavior	Drivers are free from any bad habits like (smoking cigarette, drinking alcohol, drug addiction)	strongly Disagree	29	24	2.0	.730
		Disagree	66	54.5		
		Medium	23	18		
		Agree	3	2.5		
		strongly agree	-	-		
	Drivers respect their co-workers	strongly Disagree	13	10.7	2.55	.866
		Disagree	46	38		
		Medium	45	37.2		
		Agree	17	14		
		strongly agree	-	-		
	Drivers move illegal goods while delivering materials	strongly Disagree	9	7.4	2.94	.878
		Disagree	23	19.0		
		Medium	55	45.5		
		Agree	34	28.1		
		strongly agree	-	-		
	Drivers have good communication with the staff	strongly Disagree	20	16.5	2.45	
		Disagree	43	35.5		
		Medium	42	34.7		.922
		Agree	16	13.2		
		strongly agree	-			

Source: Own Survey Data, 2019

The above table indicated that, the indicators of driver's behavior are important in determining driver's behavior. Accordingly respondents were requested to answer if drivers have bad habits, if they have good communication with their co workers, if they respect their colleges and if they move illegal goods. The respondents response shows that around 54.5% respondents agree on that driver have many bad habits this shows their personal behavior affects the road transport operation. There are also respondents who strongly agree on the driver's bad habit this is around 24% of the total. Finally the respondent's response rate can be supported by the mean value of the survey result of 2.0.

4.3.2.1 Driver's Behavior

Table 4.3 Descriptive analysis on driver's skill

			Frequency	Percent	mean	std.dev
Drivers skill	Drivers employ only with experience	strongly Disagree	3	2.5		
		Disagree	10	8.3		
		Medium	44	36.4	3.51	
		Agree	50	41.3		.896
		strongly agree	14	11.6		
	Drivers are given orientation during emplacement	strongly Disagree	14	11.6		
		Disagree	63	52.1		
		Medium	35	28.9		
		Agree	9	7.4	2.32	.777
		strongly agree	-	-		
	Drivers educational background is necessary	strongly Disagree	12	9.9		
		Disagree	1	.8		
		Medium	47	38.8		
		Agree	61	50.4		
		strongly agree	-	-	3.30	.910
	Continual trainings given to drivers	strongly Disagree	17	14		
		Disagree	67	55.4		
		Medium	32	26.4		
		Agree	5	4.1	2.21	
		strongly agree	-	-		.729
	Drivers has knowledge about the vehicle they drive	strongly Disagree	12	9.9		1.039
		Disagree	12	9.9	3.26	

Source: Own Survey Data, 2019

The assessment on drivers skill was made by using six questions and based on the questions the respondents have agree that drivers are employ most of the time by the experience they have. These shows 41.3% of the respondents agreed on drivers are employed only with their experience. Some of the respondents were agree on this idea on some percent around 36.4% of the whole. Educational background and driver's knowledge about the vehicle they drive were also questions tried to be covered by the researcher. Based on the percentage and the average mean value of the respondents drivers skill has its own effect on road transport operation. Additionally by the interviews the researcher has done with concerned bodies of the area most of the time road transport operation problems are happened because of driver's skill gap. There are no enough researches related with the research to more over substantiate the data.

4.3.2.1 Driver's Health

Table 4.4 Descriptive analysis on Health

Variable	Sub Variables					std.dev
			Frequency	Per	mean	
Drivers health	Drivers are satisfied with their salary	strongly Disagree	1	8	2.33	.523
		Disagree	81	66.9		
		Medium	37	30.6		
		Agree	1	1.7		
		strongly agree	-	-		
	Drivers have health and safety protection	strongly Disagree	6	5	2.54	.646
		Disagree	77	63.6		
		Medium	36	29.8		
		Agree	2	1.7		
		strongly agree	-	-		
	Drivers have specific working hour	strongly Disagree	4	3.3	2.54	.646
		Disagree	54	44.6		
		Medium	57	47.1		

		Agree	6	5.0		
		strongly agree	-	-		
	There is promotion and bonus for drivers	strongly Disagree	1	8	2.35	.558
		Disagree	81	66.9		
		Medium	35	28.9		
		Agree	4	3.3		
		strongly agree	-	-		

Source: Own Survey Data, 2019

As the above table indicates 66.9% of the respondents agree on drivers are not satisfied with their salary and on the other hand 30.6% of the respondents were have medium response to the question. This indicates that drivers are professionally are not happy with the benefit they have this leads to bad working condition and this affects the operation. Respondents were also requested to answer whether drivers have health and safety protection whenever they are employed 63.6% of respondents were disagreed on this question. 29.8% of them were medium and there were respondents who agreed on the question around 1.7% of the whole. Respondents with the answer of strongly disagree were about 5%. Based on the research survey collected most of them are agreed on that there are no life or health protections for drivers. The other question about driver's health which respondents were asked to answer if there is specific working hours for driver's there are about 47.1% respondents who have medium feelings on the idea. There are 44.6% of respondents who disagree on the question. Some of them were agree this account about 6%, there are also respondents who are strongly disagreed these are 3.3% of the total. 28.9% of the respondents have been in medium comment.

4.3.2.1 Driver's fatigue

Table 4.5 Descriptive analysis on fatigue and shortage

Variable	Question items		Frequency	Present	mean	std.dev
Fatigue And Shortage Of drivers	Drivers have attractive life style	strongly Disagree	22	18.2	2.36	.983
		Disagree	55	45.5		
		Medium	22	18.2		
		Agree	22	18.2		
		strongly agree	-	-		
	Number of drivers in the country is enough for the market	strongly Disagree	15	12.4	3.33	.995
		Disagree	1	.8		
		Medium	34	28.1		
		Agree	71	57.7		
		strongly agree	-	-		

Source: Own Survey Data, 2019

Among the independent variables driver's shortage and drivers fatigue is the last one. Respondent's response shows that driver's life style is very much in attractive in which 45.5% of the whole respondents. From the data collected 18.2% of respondents were disagree on the question. The other 18.2% of respondents were agreed on the question the same percent of respondents were having medium response of 18.2%. In this variable the second question which is raised for respondents were if number of drivers in the country is enough for the market. Most of the respondents were agreed on the question which is about 57.7% of the respondents. The respondents who respond medium were 28.1% of the total respondents. There were respondents who disagree about 0.8% of the total. 12.4% of the respondents were strongly disagreeing on the question.

4.4 Inferential Statistics for driver's performance and road transport operation.

4.4.1 Correlation Analysis

According to Free and Young (2009), a correlation is a measure of linear association between two variables and represented by 'r'. the correlation coefficient 'r' takes a value between -1 and +1 ($-1 < r < +1$), -1 means there is perfect negative association between the variables, 0 means there is no association among the variables of interest and +1 indicates there is perfect positive relationship between the variables.

Table 4.6 Linear relationship (Pearson Correlation) between drivers performance constructs and road transport operation

		Drivers shortage	Drivers health	Drivers behavior	Drivers skill	Road transport operation
Drivers fatigue and shortage	Pearson Correlation	1	-.053	-.114	.018	.600**
	Sig. (2-tailed)		.012	.211	.843	.000
Drivers health	Pearson Correlation	-.053	1	.000**	.080	.446**
	Sig. (2-tailed)	.564		.002	.386	.000
Drivers behavior	Pearson Correlation	-.114	.000**	1	.000*	.543**
	Sig. (2-tailed)	.211	.002		.012	.000
Drivers skill	Pearson Correlation	.018	.080	.000*	1	.377**
	Sig. (2-tailed)	.843	.386	.012		.000
Road transport operation	Pearson Correlation	.600**	.446**	.543**	.377**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

As illustrated in the above table, all the variables are significantly correlated at 1 percent significance level. The Bivariate Pearson correlation coefficient outcome indicates there is a moderate positive correlation between drivers shortage and road transport operation ($r=.600^{**}$). The other three independent variables also have a positive correlation with the dependent variable road transport. Drivers health, drivers skill and drivers behavior have $(.446^{**}), (.377^{**}), (.543^{**})$ respectively. As indicated in the table there is a positive and moderate correlation between drivers health and road transport operation. In other words road transport operation and drivers health have a relationship ($r=0.446^{**}$).

The above table also indicates there is low positive correlation between drivers skill and road transport operation. In other words road transport operation and drivers skill have a relationship ($r=0.377^{**}$). Pearson correlation results are shown in the above table there is moderate positive correlation between drivers behavior and road transport operation. In other words road transport operation and drivers behavior have relationship ($r=0.543^{**}$).

4.6 Regression analysis

Used to understand which among the independent variables are related to the dependent variables and to explore the forms these relationship. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables and unlike correlations, the primary purpose of regression is prediction (Marczyk G.R., DeMatteo D., and Festinger D., 2005). Hence, through the analysis of multiple linear regressions, an attempt has been made to determine the scale of the predicting power of the dimensions of the independent variable (i.e. Strategic Supplier Partnership, information sharing and logistics integration) on the dependent variable (i.e., procurement performance). Accordingly, multicollinearity test also conducted as well.

A regression analysis is the determination of relationship between explanatory variables and explained variable, which is used to generate a predicted value or estimates of variables and cause-effect inferences (Wooldridge, 2015; Gujarati, 2003; Campbell and Campbell, 2008). The study takes three explanatory variables, which makes the regression analysis a multivariate regression analysis. According to Wooldridge (2015), a multiple regression analysis is conducted when there are two or more independent variables on the specified model.

4.4.2.1 Multi Collinearity Test

Table 4.7: Multi collinearity test of independent variable

Model		Co linearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Drivers shortage	.186	0.914
	Drivers health	.120	0.875
	Drivers behavior	.101	0.975

Source: Own Survey Data, 2019

Multicollinearity exists when there is a strong correlation between two or more predictors in a regression model. Perfect multicollinearity exists when at least one predictor is perfect linear combination of the others (Field, 2009). He also stated that, perfect co linearity exists when at least one predictor is a perfect linear combination of the others. If the perfect there is perfect co linearity between predictor it becomes impossible to obtain unique estimates of regression coefficients because there are an infinite number of combinations of coefficient that would work equally well. The regression coefficients become less reliable as the degree of correlation between the independent variables increases. If there is a high degree of correlation between independent variables, there is a problem of multicollinearity. Field (2009) cited that Variance

Inflation Factor (VIF) value above 10 and a tolerance (1/VIF) value below 0.10 pose a multicollinearity problem. In this study, these values (both VIF and tolerance level) indicate that for this analysis, there is no serious multi co linearity problem.

Tolerance and Variance Inflation Factor (VIF) values measures the impact to collinearity among the variables in the regression mode to check multi collinearity. The Tolerance value is an indication of the percentage of variance in the predictor that cannot be accounted for by the other predictors implying the fact that very small values indicate overlap or sharing of predictive power and VIF values measures the impact of collinearity among the variables in the regression model to check multicollinearity.

4.4.2.2 Coefficient of determination, R²

Table 4.8 Coefficient of determination, R²

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.756 ^a	.572	.557	.25942	.572	38.741	.000

Source: Own Survey Data, 2019

R square measures the proportion of the variation in dependent variable and explained by the independent variable for linier regression model. The Adjusted R Square adjusts the statistic based on the number of independent variables in the model and the value on the above model summary table is a representation of the correlation between the observed values of the dependent variable, i.e. road transport operation, and the values of dependent variable predicted by the multiple regression models. From the above table, it is clear to see that the independent variables explained 55.7 % of variations in the dependent variable as shown by the adjusted R-square (0.557). Therefore 44.3% of the variations in the dependent variable were due to other factors not considered by the model.

4.4.2.3 ANOVA Test

Table 4.9: ANOVA Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.545	3	4.515	207.422	.000 ^b
	Residual	2.547	117	.022		
	Total	16.092	120			

a. Dependent Variable: road transport operation

b. Predictors: (Constant), drivrbhvh, drivshort3, drivshel3

Source: Own Survey Data, 2019

4.6.1.1 Normality test

Normal distribution takes a form of a symmetric bell shaped curve. The standard normal distribution is one with a mean 0 and a standard deviation of 1. (Garson, 2012). According to him, skew and kurtosis with range +3 to -3 used to measure normal distribution. The skew and kurtosis result show that there were normally distributed.

Table 4.10 Normality Test

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
drivshort3	121	-.780	.220	.238	.437
drivshel3	121	.439	.220	1.311	.437
Drivrbehv	121	-.349	.220	-.443	.437
drivsk7	121	-.942	.220	1.755	.437
Valid N (listwise)	121				

Source: Own Survey Data, 2019

4.4.2.4 Coefficients Results

Table 4.11 Coefficients Results

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.447	.099		4.531	.000
	drivshort3	.285	.016	.678	18.307	.000
	drivshel3	.291	.033	.334	8.713	.000
	Drivrbehv	.305	.022	.526	13.660	.000

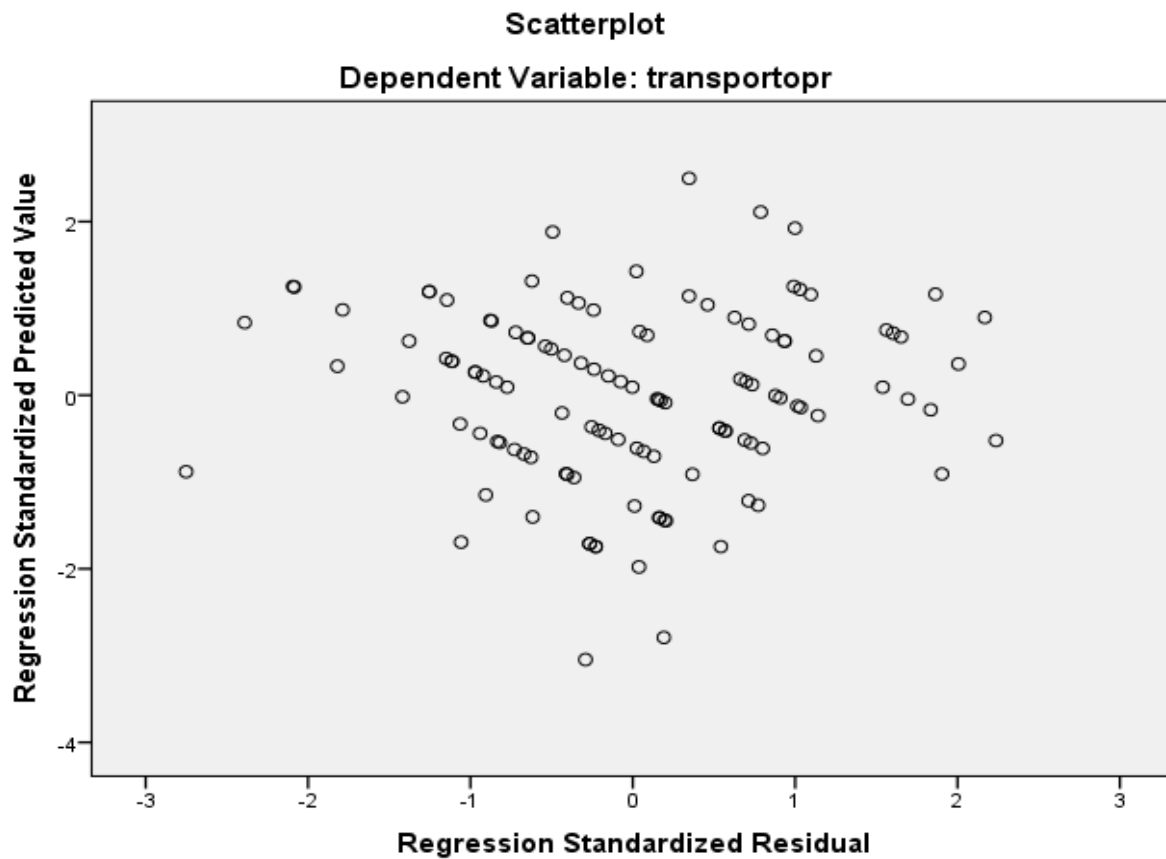
Dependent Variable: road transport operation

Source: Own Survey Data, 2019

The above table indicates that beta coefficients for the independent variables and the significance of the explanatory variables in relation to the explained variable. The highest statistically significant coefficient was 0.305 which belongs to driver's behavior (p. value=0.000). This was followed by driver's health, driver's shortage and fatigue with coefficient of 0.291(p.value=0.000), 285 (p.value=0.000) respectively. The model takes a level-level interpretation of the coefficient. Therefore, a one standard unit increase in driver's behavior will increase transport operation performance of the organization by .526 units, one standard unit increase in drivers health will increase the transport operation of the organization by .334 amounts and one standard unit increase in drivers shortage and fatigue will increase transport operation performance of the organization by .678unit.

4.6.1.4 Homoscedasticity assumption

At each level of the predictor variable(s), the variance of the residual terms should be constant. This just means that the residuals at each level of the predictor(s) should have the same variance (homoscedasticity); when the variance is very unequal there is said to be homoscedasticity Field, (2005).



Source: Own Survey Data, 2019

Figure 4.3 Homoscedasticity Variance.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This research was presents the discussion of major findings, conclusions, recommendations and suggestions for further studies according to the effect of drivers performance on road transport operation. The presentation of the findings is in the order of the sought aspects of the study which were; to find out on awareness of drivers performance effect on road transport operation.

5.2. Summary of major findings

The demographic characteristics, the descriptive statistics and the regression analysis of the study are summarized as follows:

The descriptive statistics illustrated in terms of percent (frequency), mean and standard deviation stated there is a moderate performance in most of the indicator questions discussed to measure the variables under consideration. A lower mean value was registered for indicators like drivers behavior with (M=2.485), drivers skill with (M=2.93), drivers health and drivers shortage (M= 2.85), (M=2.44) respectively are few among the most. However, the descriptive statistics is only stating the average response collected from the survey. Therefore, further investigation was needed to determine the cause effect relationship.

The association between variables was conducted using a Pearson correlation matrix. The result suggested that there is strong positive association between the dependent variable road transport operation and the explanatory variables drivers behavior and drivers shortage $r = .543$ and $r = .600$ respectively. Even though there is strong positive association between road transport operation and drivers skill the degree of correlation is relatively lower of the former variables with $r = .377$. In addition, there is a moderate relationship between most of the independent variables, which leads to reduce a multicollinearity problem. Finally, the regression analysis of the study indicates all the independent variables behavior, skill, fatigue and health of drivers significantly affect road transport operation of the organization. Drivers behavior, health and shortage with road transport operation are significant at 1 percent significance level with standardized Beta coefficients ($\beta = .526$, $\text{sig} = .000$ and $\beta = .334$, $\text{sig} = .001$ and $\beta = .678$ respectively).

5.3 Conclusions

According to Oxford and Burry Stock, 1995, the Likert scale mean value which is between; 1.0 – 2.4 = low score, from mean value of 2.5 – 3.4 = Median and finally, from mean value of 3.5 – 5 = high score.

Based on the study result, we can conclude that drivers behavior and road transport operation are positively related. However, driver's skill is not statistically significant to influence road transport operation

According to the results of this study, it can be concluded that driver's shortage and the road transport operation of unique are positively related. In addition, driver's health has a significant effect on road transport operation.

Based on the study result, we can conclude that drivers health and road transport operation are positively related. In addition, driver's shortage has a significant effect on road transport operation.

5.4 Recommendation

The findings of this research can be important evidence for managers who take charge road transport operation management practices .In light of the findings and conclusions, the following possible recommendations are suggested as being valuable for improving road transport operation practices to assure Organizational Performance.

From the study, it was established that driver's performance had been moderately exploited to boost road transport operation.

The study therefore recommended that the case company should create drivers performance development trainings. The case company should also develop means of controlling of drivers behavior and the case company should also has to work on drivers benefits related with health, safety and protection related things.

From the study drivers skill has a moderate effect on road transport operation. It is recommended that the case company management should engage in driver's skill development issues.

From the study findings it is recommended that the case company should work on increasing number of drives because driver's shortage has a moderate effect on road transport operation.

Generally, So as to be competitive enough, it is better for the case company to give due attention on drivers performance for more improvement of their Organizational Performance. In order to achieve advancement in marketing and financial performance in the long run through enhancing road transport operation, it is better for the organization to give due emphasis on drivers performance.

5.5 Areas for Further Study

This study directly focuses drives performance influence on road transport operation. This research can be further explored by adding more driver's performance indicator factors and others which could influence road transport operation. The study also formed a basis for further research in determining the extent to which driver's performance is a one of the key indicators of road transport operation.

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Appendixes-I: A Questionnaire to be filled by the road transport related organization

Addis Ababa university school of commerce

Department of Logistics and Supply Chain Management

Dear respondents:

My name is Fitsum H/Michael and I am a graduate student at Addis Ababa University, school of commerce, department of logistics and supply chain management. For my final project, I am examining challenges of managing drivers and their influence on road transport operations: the case of Unique Transport Cross Border Freight Association, Addis Ababa, Ethiopia. Because of your esteemed company is among the users of road transport I am inviting you to participate in this research study by completing the attached questionnaire.

The following questionnaire has three sections and will require approximately 10 to 15 minutes to complete. In order to ensure that all information will remain confidential, please do not include your name. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaire promptly (I personally collect it from your office). Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding challenges of managing drivers and their influence on road transport operations.

Sincerely,

Fitsum H/Michael

Phone number: +251910534156

E-mail: fitseha@gmail.com

SECTION I- GENERAL INFORMATION

1. BACK GROUND INFORMATION OF RESPONDENTS

1.1. Sex of the respondent: Male [] Female []

1.2. Level of education

Diploma [] First Degree [] Masters Degree [] Other (specify) _____

1.3. Experience

Less than 1 year [] 1-5 year [] 6-10 year [] More than 10 year []

1.4. Type of organization

Transport company [] Importer [] Transistor [] Transport Authority []

1.5. What is your position/status in the organization?

Senior level manager [] Middle Level Manager [] Lower Level Manager [] other
(specify) _____

SECTION II- FACTORS ASSOCIATED WITH DRIVERS PERFORMANCE

Detailed questions on driver's performance effect on road transport operation (behavioral, skill, level of education, professionalism) experienced in your organization and Please show the extent to which you believe about the following statement. Putting the right mark “√” on (1) means that you strongly disagree (2) disagree (3) moderate (4) agree (5) strongly agree

No	Measurement items	Measurement scale				
		Strongly disagree (1)	Disagree (2)	Moderate (3)	Agree (4)	Strongly agree (5)
	Drivers behavior					
1	Drivers are free from any bad habits like (smoking cigarette, drinking alcohol, drug addiction)					
2	Drivers move illegal goods while delivering materials					
3	Drivers respect their co workers					
4	Drivers have good communication with the staff					
	Drivers skill					
5	Drivers have a good knowledge about the vehicle they drive					
6	Drivers educational background is necessary while drivers are employ					
7	Drivers are given orientation during employment					
8	continual trainings are given to drivers after to increase their ability					
9	Drivers know the goods they deliver					
	Drivers health					
10	There is a safety and health					

	protection for drivers during travel					
11	Drivers have specific working hour like other professionals in other fields					
12	Lifestyle of drivers is attractive					
	Drivers fatigue					
13	Drivers have enough time to sleep					
14	Drivers take diet, increase physical fitness in order to avoid mental and physical disorder					
15	There is assistant who replace the driver during long travel					

Section III Detailed questions on drivers performance influence on road transport operation, to what extent the above driver's performance measures affect road transport operations (on time delivery, cost effectiveness, reliability, safety of goods) in your organization and fill the answers by putting the right mark “√” under (1) means that you strongly disagree (2) disagree (3) moderate (4) agree (5) strongly agree

No	Measurement items	Measurement scale				
	On time delivery	Strongly disagree (1)	Disagree (2)	Moderate (3)	Agree (4)	Strongly agree (5)
1	Drivers arrive by the needed time by customers					
2	Drivers arrival time has impact on the operation of the organization					
3	Drive are given customer care trainings to deliver goods on time					
	Cost effectiveness					
3	Additional cost incurred because of drivers					
4	Truck damage occurred because of drivers carelessness while					

	travelling					
5	The fuel consumption for one travel is known					
6	Technical service are given for the vehicle while traveling					
	Safety of goods					
7	Incidence of cargo damage occur because carelessness of driver					
8	Incidence of cargo lost or material lost					
9	Fraud on materials happens during transportation					

Thank you for your time and participation