



**COLLEGE OF BUSINESS AND ECONOMICS GRADUATE STUDIES
DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

**HOW EMPLOYEE PERCEIVE THE EFFECT OF OUTSOURCING FLEET
MANAGEMENT FUNCTIONS ON THE OPERATIONAL PERFORMANCE OF ILRI
(INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE)**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Busha Temesgen. All sources of material used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of earning any degree.

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ACRONYMS/ABBREVIATIONS

ILRI: International Livestock Research Institute

BPO: Business Process Outsourcing

MRO: Maintenance, repair and operations

BSC: Balanced scorecard

ABSTRACT

This study investigates the impact of outsourcing fleet management functions on the operational performance of International Livestock Research Institute (ILRI). This study attempts to see the impact of outsourcing procedure, service quality, relationship quality with the supplier, supplier fleet management system and financial value on the operational performance of the institute.

The main aim of the research is measuring operational performance from employee perspective using the objective of outsourcing which are focus on core competency, improved flexibility and improved customer service. The study employed mainly quantitative data analysis techniques. Descriptive statistics such as mean, and frequency tables were used to describe the data. Inferential statistics such as ordered logit model were employed in order to answers the basic questions. The study incorporates five independent variables in which all of them was measured on a 5-point Likert-Scale, with “1” stands for “Strongly agree” and “5” stands for “Strongly Disagree”. Mean was used as a measure of central tendency. Moreover, the results of the study suggest that, operational performance of ILRI is not improved by outsourcing the fleet management functions. The study also found a positive correlation among all of the variables (Procedure of outsourcing, service quality, relationship quality, financial value & supplier fleet management system) which thought to determine the operational performance of the institute. Regarding the correlation, it is possible to conclude that there is a strong and positive relationship among the five variables on which this study was relied. All variables except supplier fleet management system are significant effect on operational performance of the institute. Outsourcing is justifiable if it has positive impact on operational performance which can be explained in improved quality in terms of service and relationship, cost reduction & achieved the intended objective.

Keywords: *Outsourcing, Fleet management, Quality, Financial value, Operational performance, ILRI, Ethiopia*

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Outsourcing, also known as Business Process Outsourcing (BPO), is the process of hiring another individual or company, either domestically or internationally to handle business activities for you. It has become a common business practice that allows small and medium-sized businesses to gain services and skills they would usually find hard to develop, because of either financial or manpower restrictions, or possibly a combination of both (Chris C. Ducker, 2009).

Outsourcing has become an important source of competitive advantage, and it is expected to remain an important component of business strategy in future years (Broedner et al. 2009, Kroes and Ghosh 2010).

If the outsourcing project goes well, outsourcing can help improve business performance by enabling a company to focus on its core competency and getting back to what it does best. Another reason is that by transferring non-core activities to a specialized vendor, it can help to reduce the cost, and ultimately improve the performance of the activity in addition, as the function or service is outsourced to a “best in class” provider, there may be greater flexibility in the systems. It can also save the company money and reduce risk. As a result, companies can become more profitable and more competitive. Kletzer (2004) goes as far as saying outsourcing “brings real, solid benefits to the economy”. Savings have been mentioned from between twenty and fifty percent per outsourced job (Clinton, 2004, & Hoffman, T. 2003). Moreover, the Outsourcing Institute emphasized the fact that companies can gain a 9% cost saving, and a 15% increase in capacity and quality, on average, through outsourcing. It can also help outsourcers to obtain technical capabilities that it would not have been able to provide on its own (Kletzer, 2004) and thus help firms take advantage of the best outside vendors and restructure estranged departments that are reluctant to change (Edward Sweeney, 2006).

The American Small Business Association also explained that most of business owners spend up to 40% of their day handling simple administrative tasks. Being able to designate some of, if not all, of these tasks to an outsourcer, the firm will have 40% more time to concentrate on providing better quality products and services to customers (Chris C. Ducker, 2009).

1.1.1 FLEET MANAGEMENT

Fleet management is an administrative approach that allows companies to organize and coordinate work vehicles with the aim to improve efficiency, reduce costs, and provide compliance with government regulations. While most commonly used for vehicle tracking, fleet management includes following and recording mechanical diagnostics and driver behavior,(Margaret Rouse, 2017)

Fleet management is a key aspect to the general strategy development in an organization, and for this reason it has to be designed and implemented based on its guidelines, and the characteristics and goals of said organization .For some organizations, their vehicle fleet management is the main activity in their value chain and represents its major asset to provide a service. This would be the case for passenger transportation companies, ground shipping, car rentals, renting companies, taxicabs, mail services, or cleaning and trash collection services provided by city councils. For other organizations, it's a support activity to their main one, or a bonus such as a car, given to their executives for their personal use. This would be the case for companies with sales representatives (pharmaceutical industry, IT services, etc.), airports, supermarkets, and non-governmental organizations (NGOs), (Jose Miguel,2016).

Before outsourcing the fleet management functions ILRI Transport unit composed of 18 staffs who were working at different positions including mechanics working at the ILRI workshop. There was a total of sixty-seven vehicles and Seventeen motorcycles. The fleet types were twenty Toyota Landcruiser's, thirty-four Toyota hailux double cabin, six coaster bus, six sedan and one minibus. ILRI outsourced its fleet management functions in order to gain the benefits of outsourcing the fleet management functions.

When fleet management is not a core business to organization or not efficient and cost effective within in-house fleet management, organizations tend to outsource it with total outsourcing or selective outsourcing. Outsourcing is transferring responsibility which is non-core business functions to third-party providers for various reasons: to reduce head count, to cut expenses, and to improve service.

ILRI is one of the organizations who outsourced its all fleet management functions in order to get the outsourcing benefits through improved operational performance. ILRI is a non-profit institution with a staff of about 700 and an annual operating budget of about US\$80 million. ILRI is an international research institute co-hosted by Kenya and Ethiopia. It works through a network of regional and country offices and projects in East, South and Southeast Asia, Central, East, Southern and West Africa. (www.cgiar.org).

It works with partners worldwide to enhance the roles that livestock play in food security and poverty alleviation, principally in Africa and Asia. The outcomes of these research partnerships help people in developing countries keep their farm animals alive and productive, increase their livestock and farm productivity in sustainable ways, find profitable markets for their animal products, and reduce the risk of livestock-related human diseases.

In Ethiopia, ILRI works with national organizations to achieve the aims of the government's Growth and Transformation Plan and the Ministry of Agriculture's Agricultural Growth Program. These national partners include federal ministries and research institutes, universities, regional state government offices and research institutes, NGOs, the private sector, local communities and their representatives as well as development projects.

Therefore, to achieve the objective of the organization the positive effect of outsourcing fleet management functions must exhibit on the operational performance of the organization.

1.2 STATEMENT OF THE PROBLEM

In Ethiopia, ILRI undertakes its research in representative areas scattered all over the country including pastoral and agro-pastoral areas, which demands good and efficient transportation system that provides timely services and technically reliable vehicles which do not breakdown in the middle of important task. The fleet management system should also guarantee low cost, timely support and reduced or risk-free operation of vehicles with expected standard of quality. Wise outsourcing can provide a number of long-term benefits such as control capital costs, increase efficiency, reduce labor costs, focus on your core business and reduce risks.

Once a company outsources their non-core business it is mandatory to carefully plot and see the effect on the operational performance against the intention of outsourcing the business. Outsourcing is not a onetime task it requires regular monitoring to make sure whether the intended benefits are gained or not. When firms outsource their non-core business using the right procedure then the business will be effectively managed, service & relationship quality will improve. The listed benefits of outsourcing will have impact on operational performance which help the firm to focus on their competency, improve its operation of standard, avoid interruption of duty, able to shorten its internal processing time, able to use asset (human and capital) resources to its primary business and change fixed cost in to variable cost.

Therefore, the researcher doubts the presence of those effects of outsourcing on operational performance of ILRI. These conditions interest the researcher to undertake a research with the objective of studying the impact of outsourcing fleet management functions on the operational performance of the institute. Even though outsourcing reduces costs, increases efficiency and eliminates risk, its role is also strategic which allows firms to focus on their competency which in return improve the operational performance of a firm.

ILRI Ethiopia outsourced its fleet management functions five years ago. However, no evaluation has been made on the effect of outsourcing the fleet management functions on the operational performance of the organization. Therefore, assessing its effect on the operational performance will help the organization to know its status and take corrective action if required.

1.3 RESEARCH QUESTIONS

The research will determine the effect of outsourcing fleet management on operational performance of ILRI and will answer.

- I. To what extent the outsourcing procedure implemented in ILRI affected the operational performance of the institute?
- II. How does supplier fleet management system affects the operational performance of the institute
- III. How does service quality affects the operational performance of the institute?
- IV. How is the operational performance of ILRI affected by the financial value gain through outsourcing fleet management function?
- V. How does the relationship quality with the supplier affects the operational performance of the institute?

1.4 RESEARCH OBJECTIVE

1.4.1 GENERAL OBJECTIVE

The main objective of the research is to examine the effect of outsourcing fleet management on the operational performance of ILRI.

1.4.2 SPECIFIC OBJECTIVE

- To determine whether the outsourcing procedure followed affects the operational performance of ILRI.
- To determine the fleet management system of the supplier in improving the operational performance of the institute.
- To determine the service quality that affects the operational performance of ILRI.
- To determine the financial value which affects the operational performance of the institute.
- To determine the relationship quality with supplier that affects the operational performance of the institute.

1.5. SIGNIFICANCE OF THE STUDY

As the practice of outsourcing in Ethiopia is somehow new, the effect of it on the operational performance is not yet assessed in many organizations. Recently few organizations outsourced their non-core businesses however; no research has been carried out to evaluate the effect of

outsourcing on the operational performance. Therefore, the researcher believes that this research has great significance in creating awareness, in identifying parameter to determine the effect of outsourcing on operational performance in general and specifically to fleet management outsourcing. Furthermore, it can also be used as a reference to similar organization with ILRI who have a plan to outsource their non-core business or who already outsourced their non-core businesses functions.

1.6 SCOPE FOR THE STUDY

Geographical scope ILRI is found in all the five continents head quarter ILRI Kenya however this study is limited to ILRI Ethiopia campus. Outsourcing can impact the operational performance of a firm in a number of ways however this study tried to see the impacts from the following perspectives these are: the outsourcing procedure, quality in terms of service & relationship, supplier fleet management in terms of driver, maintenance and fuel management and also financial value gain from the perspective of price stability, price reasonableness, operational cost reduction and avoidance of unnecessary cost.

1.7 LIMITATION OF THE STUDY

The preliminary challenge was limited literature in the study area especially in Ethiopian case. The second limitation was confidentiality: some of respondents was reluctant to provide information they thought to be confidential for fear of being criticized by their superiors. The third limitation was ILRI found in all the continents however this study is limited to ILRI Ethiopia if this study was done in all the continents, it would have given the full picture of the organization status in regarding to the outsourced fleet management functions. The other limitation was getting the Questionnaire collected it required several walk-ins to staff office to get the Questionnaire back.

1.8 DEFINITION OF TERMS

1.8.1 Fleet management- is an administrative approach that allows companies to organize and coordinate work vehicles with the aim to improve efficiency, reduce costs, and provide compliance with government regulations. While most commonly used for vehicle tracking, fleet management includes following and recording mechanical diagnostics and driver behaviour,(Margaret Rouse, 2017).

1.8.2 Outsourcing: Outsourcing is “the strategic use of outside resources to perform activities traditionally handled by internal staff and resources” (Handfield, 2006). As Duening and Click, 2005 it is “the movement of business processes from inside the organization to an external service

provider” and Brown and Wilson, 2005 also defines it as “the act of obtaining services from an external source”.

1.8.3 In-sourcing: A decision by an organization to retain functions internally rather than outsource. The decision is often made after the organization has performed independent benchmarking to determine that its costs and efficiencies are in line or better than those achieved by comparable organizations. The term is also used in cases where services are being brought back in house after a period of outsourcing them (Outsourcing Glossary of Terms, 2007).

1.8.4 Metrics: Metrics are parameters or measures of quantitative assessment used for measurement, comparison or to track performance or production. Analysts use metrics to compare the performance of different companies, despite the many variations between firms. From Investopedia (<https://www.investopedia.com/terms/m/metrics.asp>).

1.8.5 Operational performance: is defined as Firm's performance measured against standard or prescribed indicators of effectiveness, efficiency, (business dictionary).

1.9 ORGANIZATION OF THE STUDY

The research report consists of five chapters. The first chapter focuses on introductory aspects includes background of the study statement of the problem, objective of the study, scope of the study, significance and limitations of the study & definition of terms. Chapter two present the literature review, which served as a basis for understanding the subject matter. Chapter three focus on the methodology of the study. Chapter four concentrated with the presentation and analysis of data obtained from respondent. The fifth chapter, which is the closing chapter, focuses on summary of findings, conclusions along with possible recommendations.

CHAPTER TWO

RELATED LITERATURE REVIEW

This chapter gives an insight into the literature by other scholars and researchers on the effect of outsourcing fleet management on the operational performance. It reviews literature that is related to the specific and general objectives of the research. It specifically covers the past studies/main review where it discusses literature related to the specific objectives of the study. It also presents literature on the critical review of major issue, and the conceptual framework. Moreover, this chapter discuss about, literatures including past studies which related to the effect of outsourcing fleet management functions on the operational performance.

2.1 CONCEPT OF OUTSOURCING

Outsourcing is contracting with another company or person to do a particular function. Almost every organization outsources in some way. Typically, the function being outsourced is considered non-core to the business, (Dian Schaftauser ,2015). Outsourcing generally refers to the procuring of material inputs or services by an organization from ‘sources’ outside the organization. Outsourcing becomes an operational practice through which the organization provides itself the possibility to mobilize its scarce time and financial resources and direct them to the development of its core competitive characteristics, in the same time achieving better results from its outsourced secondary operational processes. Outsourcing is promoted as one of the most powerful trends in modern management. The rationale for outsourcing some functions and/or processes includes substantial financial economies, increased ability to focus on strategic issues, access to technology and specialized expertise, and an ability to demand measurable and improved service levels. Outsourcing differs from alliances, partnerships or joint ventures in that the flow of resources is one-way, from the outsourced organization to the outsourcer organization with profit sharing or mutual contribution being not a typical common practice (Satyendra, 2016).

2.2 OUTSOURCING FLEET MANAGEMENT:

Outsourcing in the fleet industry has also become prevalent since outsourcing as a “strategic tool” has become more common in the business world. Companies realized that they needed to focus on their core business areas and consider outsourcing of no-core areas. The fleet departments of various organizations were also subsequently evaluated and the different functions within the departments scrutinized in order to determine whether to outsource fleet functions or not. This whole idea of outsourcing became part of the strategic discussions at various levels within

organizations and subsequently outsourcing as an option followed (A publication of Lyceum College,2017).

Fleet management outsourcing has grown in popularity in recent years. At a time where there are cost challenges for most businesses, outsourcing is being used by businesses as a method of reducing the costs of providing fleet. The main benefits of outsourcing derive from allowing the business to focus on core activities. For the most part businesses are not fleet management experts and maybe lack the internal resource to run the fleet at the most efficient level. Involvement in the running of the fleet could also distract employees from their core role. Through utilization of outsourced fleet management services business may be able to leverage economies of scale in terms of procurement and operational management. Outsourced providers may also bring advanced technologies which allow the host business to benefit from enhanced flexibility and process control. This allows the business to generate cost savings through reduced overhead and flexible staffing arrangements, (Nick Jones,2017).

2.3 BENEFITS OF OUTSOURCING

Outsourcing is an excellent strategy which allows company to gain a number of benefits, which can impact positively the operational performance of an organization. The followings are some of the benefits of Outsourcing:

2.3.1 FINANCIAL VALUE

One of the main advantages of outsourcing processes certainly is the emerging cost advantage. This can be traced back to several reasons. Outsourcing within one's own economic area already facilitates savings in a double-digit realm, (Team twago 2010). Outsourcing of certain activity results in transaction costs composed of finding adequate vendor and negotiating contract, but also produces continuous additional overhead cost to monitor vendor's performance and update outsourcing contract to match company's needs. To offset these costs, vendor must have significant advantage in performing outsourced activity. Vendor must be able to provide sufficiently low price in order to bring savings for company and still create margin for itself. Economies of scale allow vendor, serving several clients, to spread fixed costs over larger volume of activity than any individual company could use for its own need (David,2011). Spreading fixed costs over larger volume therefore results in lower average cost per unit (Panzar & Willig 1977). In particular cases even, variable cost per unit can decrease with increasing volume. This means,

that not only average cost per unit decreases but also marginal cost, resulting consequently in further cost efficiency increase cited on (Vladimír Stříteský, 2016/17). Cost savings were the most dominant benefit with 70 percent of companies expecting realization of cost savings as a consequence of outsourcing (Landis K.M. 2005). Access to an outside provider's lower cost structure is one of the most compelling short-term benefits of outsourcing. Other benefits sought by organizations are cost reduction with enhanced performance and conversion of fixed costs into variable costs. Service providers can handle varying demand more efficiently because of economies of scale, automation, process maturity, and investment in the latest technology, (Bhimrao Ghodeswar, 2008). A vendor may provide better performance at a lower cost than in houses because of economies of scale, specialization and tactical focus. Cost savings may be secured by converting fixed costs to a variable cost structure to accommodate fluctuations in labor and equipment needs and by purchasing services at a fixed cost per transaction, a client can avoid financial uncertainty, cited on (Beaumont and Sohal, 2004).

According to Carroll Hern & Ronald J. Burke, (2006) explained the studies of cost savings pertaining to outsourcing arrangements of two or more years showed average savings of fifteen percent they also stated that it is reasonable to expect at least a 20% reduction in HR administrative costs. Furthermore, cost savings occur due to the fact that outsourcing provides certain leverage that is not available to a company's internal departments. This leverage can have many dimensions: economies of scale, process expertise, access to capital and access to expensive technology. The combination of these dimensions creates the cost savings inherent in outsourcing. By taking advantage of external suppliers' lower costs, a firm can reduce its own fixed, variable and human costs. Due to reduced capital expenditures, firms may free up funds, make capital available for other purposes, and achieve greater financial flexibility. As a consequence of the provider's economies of scale, firm can often achieve cost reduction, which in turn allows the firm to market more aggressively to increase market share, and eventually becomes an industry leader. Even though cost savings could lead to greater profitability, there is a potential risk of incurring transition costs, and project and vendor management costs, which can more than offset the savings from outsourcing, resulting in a net loss. In a general business environment, financial measures of outsourcing performance also include: inventory/fixed assets turnover, liquidity (e.g., quick/current ratio and inventory to net working capital), and leverage (debt to assets/equity, long term debt to equity). Using these indicators allows a firm to better understand the financial impacts

of outsourcing and provides feedback for investment decisions and necessary changes, (Youxu Tjader et al,2013).

2.3.2 INCREASED OPERATIONAL FLEXIBILITY

Another advantage is the flexibility one gains. On the one hand the tasks, which have to be handled in the short term, can be promptly outsourced, which creates additional resources during peak times of the business. This way it can be guaranteed that during seasonal additional workloads or during strong growth periods nobody from the permanent staff will be overburdened. In case of unforeseen tasks, single projects or processes can be outsourced to service providers and thus time capacities be freed to meet the sudden demands (Team twago,2010). Operations flexibility reduces firm's vulnerability to unexpected alterations in short-term issues such as product and/or service volume, timings, or schedules as well as long-term concerns such as variations in customers' needs or fast obsolescence of technology. It helps controlling and favoring a general sensibility when uncertain situations or unexpected disruptions may arise in the business environment. Hence, flexibility applied at all firm levels fosters the ability of the organizations to react quickly while putting the variety of management capacities into action, (Daniel Arias-Aranda, Oscar F. Bustinza & Vanesa Barrales-Molina 2011)

2.3.3 INCREASED QUALITY

Most of the times tasks or projects are outsourced to others who specialize in the particular field. The outsourced vendors must have specific equipment and technical expertise, most of the times better than the ones at the outsourcing organization. This means the tasks should be completed faster and with better quality and prompt delivery, (Sudawan Somjai,2017). The co-operation with external specialists on a project basis implies temporary relief of one's own staff. Since one – in principle – can freely select the outsourcing partner and thus fulfils certain criteria and demands for competence, one always has the right employee for the right task. The advantage of outsourcing is also the access to a vast portfolio of specialized people. A company can co-operate for the time being on a project basis with a partner, who is a specialist in one area of expertise, but who would otherwise not stand a chance to gain a steady employment in this company due to his/her high specialization (Team twago 2010).

A. Service Quality

Mohamad Noorman et al ,2014 explained service quality very well and they also described in terms of operational and partnership quality variables which is significant in determining service quality. Even though the service quality variables they have listed for outsourcing IT service however the variables can be used for any service outsourcing. A Literature by S. Chakrabarty et al, (2007-2008) also describes outsourcing service quality in two ways relationship quality and Service quality. we will see both qualities below

Service quality is about the consumers' overall impression of the relative inferiority or superiority of the organization and its services, (B. Kim and K. Park,2003). Service quality is also defined as how well a delivered service level matches customer's expectation. Within the service marketing, the SERVQUAL is considered one of the most cited and adopted models for measuring service quality, (A. Parasuraman et al ,1985 & 1988). The model measures service quality by looking into the gap between customer's perceptions and expectations, (S. Chakrabarty et al, 2008).

Quality is not limited to product or service issue. It is also applicable to overall process of creating products and or services. Quality considerations apply to every aspect of outsourcing not just auditing and surveillance. Lack of quality at any point in the outsourcing process can result in product recall or major outsourcing risk. Without due diligence and appropriate controls, Outsourcing could end up being costlier than in house manufacturing and service, resulting in high defect ratee, late deliveries, poor service and customer dissatisfaction (Govind Ramu, 2008).

The study by (Ramlah Hussin et al,2007) in the context of Malaysian organization discovered that service quality is a significant predictor of outsourcing success. However, the study operationalized service quality in three dimensions only, namely responsiveness, tangible and responsibility. Another study by Chakrabarty et al. showed that all the five dimensions of SERVQUAL which are tangibles, reliability, responsiveness, assurance and empathy are significant determinants of outsourcing success (S. Chakrabarty, D. Whitten, and K.W. Green,.2008). This study uses Chakrabarty et al., service quality with five dimensions as shown in Table 2.1 below.

Table 2.1: Operational Delimitations for service quality variables source: (Mohamad Noorman et al ,2014)

Variable	Operational Definitions
Tangible	appearance of outsourcer's physical facilities, equipment, personnel and communication materials
Reliability	outsourcer's ability to perform the promised service dependably and accurately
Responsiveness	outsourcer's willingness to help customers and provide prompt service
Assurance	knowledge and courtesy of outsourcer's employees and their ability to convey trust and confidence
Empathy	caring, individualized attention which the outsourcer provides to its customers

B. Relationship Quality

Relationship quality is a higher-order construct consisting of variety of positive relationship outcomes that reflect the overall strength of a relationship and the extent to which it meets the needs and expectations of the parties .Higher relationship quality creates value and is regarded as success by at least one of the parties .Relationship quality is termed differently by different researchers like partnership quality , relationship closeness, relationship strength and relationship intensity .Relationships characterized by trust are so highly valued that parties desire to commit themselves to such relationships. Mutual understanding is defined as degree of understanding of behaviors, goals and policies between partners. To enhance the relationship, it is important to understand the exchange partners. The shared domain knowledge and a common “language” between the parties are important facets of alignment and thus relationship quality (Vivek Gupta & Sushil,2014).

The relationships based in mutual trust, shared values, performing similar services or making similar products, working in the same market, using the same productive service, similar supply chain and similar technologies, create competitive advantages for both organizations due to the

positive impact in their abilities to adapt to the market, to solve problems that show up when they work together, and to eliminate the opportunistic behaviors (Jose Miquel Fernandez Gomes 2015).

Relationship quality is operationally defined as a relationship between service provider and customer that involves high levels of trust and commitment, quality communication, cultural similarity, and balanced interdependence between entities in the service partnership. Such quality leads to successful long-term relationships that are operationally beneficial to both service provider and consumer. The components of a quality relationship are somewhat difficult to attack directly causing service providers to seek controllable antecedents. Service quality is such an antecedent. The components of service quality (tangibles, reliability, responsiveness, assurance, and empathy) are relatively more controllable from a managerial perspective. When the client sees that the vendor is providing high service quality, it would develop a positive impression of the vendor, and could lead to a growth in relationship with the vendor and improved relationship quality, (S. Chakrabarty et al 2008).

Table 2.2 Operational Delimitations for partnership quality variables source: (S.Chakrabarty et al, 2008)

Variable	Operational Definitions
Benefit risk Sharing	Degree of articulation and agreement on benefit .and risk between partners
Business Understanding	Degree of understanding of behaviors, goals, and policies between service receiver and service provider
Trust	Degree of confidence and willingness between outsourcing partners
Knowledge Sharing	The degree of which critical or propriety information is communicated between outsourcing service receiver and vendor, which broadly includes tacit and explicit knowledge
Commitment	Degree of incompatibility of activities, resources shared and goals between service receiver and service provider
Conflict	The degree of the pledge of relationship continuity between outsourcing service receiver and vendor.

Furthermore, according to Vivek Gupta & Sushil, 2014 relationship quality is also conceptualized in four dimensions: (a) the vendor's business understanding of the outsourced work, (b) trust, (c) commitment, and (d) flexibility. A high-quality relationship then is expected to be one with high levels in all four dimensions. For this study we will see the three dimensions: trust, understanding and commitment.

2.3.4 REDUCED RISKS

One of the most crucial factors determining the outcome of a campaign is risk-analysis. Outsourcing certain components of your business process helps the organization to shift certain responsibilities to the outsourced vendor. Since the outsourced vendor is a specialist, they plan your risk-mitigating factors better, (Sudawan Somjai, 2017). It assists in the transference of risk. If the organization perceives that one of its processes has high risks, then this can be transferred by outsourcing to that organization for which this process is a regular process and does not constitute a risk, (Satyendra, 2016).

2.3.5 FOCUS ON CORE COMPETENCIES

Outsourcing allows organization to focus on their expertise and core business. When organizations go outside their expertise, they get into business functions and processes that they may not be as knowledgeable about and could potentially take away from their main focus, (Patricia, 2017). The ability to concentrate on core process rather than the supporting ones outsourcing the supporting processes allows the organization more time to focus on company's core business process or job assignment, (Sudawan Somjai, 2017). Managers should apply their experience and knowledge to core competencies and outsource activities in which they are less competent; can benefit from vendors' expertise. The choice of which activities to outsource is often determined by the strategic value of the activity and its level of operational performance. Generally, less strategic activities that show low internal performance are more likely to be outsourced (Beaumont and Sohal, 2004).

Thus, outsourcing renders more advantages than merely saving costs and is therefore not only interesting for large enterprises, but especially for smaller and medium-sized businesses, too. Of course, the described advantages don't need to appear clustered, nor do they always have the same weight. Still, every successful businessman should take outsourcing into consideration and he will realize that it's worthwhile more often than he had imagined.

2.4 DISADVANTAGES OF OUTSOURCING

Main disadvantages of outsourcing are loss of managerial control over outsourced operations, threat to security and confidentiality, quality problems, hidden costs and reallocation of existing teams. First, disadvantage related to the loss of control over the outsourced operations stems from the reason that managing external resources requires special skills which is a combination of the skills of people and process management, contract management, and power negotiation. Second, almost every outsourcing contract has terms of security and confidentiality spelled out, but the execution and audit are always difficult. In financial services, requirements keep information known to investment bankers away from traders, brokers, and other individuals who might attempt to use such insider information improperly. Third, one reason to outsource is the expectation of receiving better service from the outsourcer than from internal staff. Outsourcer has to be chosen in that particular way to ensure that there is no bad influence on the quality of goods and services produced. Otherwise, company may lose its position on the market. Fourth, company will sign a contract with the outsourcing company that will cover the details of the service that they will be providing. Anything not covered in the contract will be the basis for the company to pay additional charges. For example, an analyst may intentionally exclude costs to favor one decision, such as selecting one provider versus another, choosing in-sourcing over outsourcing, or staying in a particular business or not (Liao KG, Reategui LA, 2002). Fifth, the outsourcing is often related to the firing in employees' minds. It is also a problem for the organization 'stop management team to decide how to reallocate the existing employees. Often after outsourcing a part of the original team moves from outsourcing party to the outsourced one (Bragg SM, 2006). which in turn causes major changes. According to Bragg, sponsoring such a major change and seeing it fail can lead to termination of one or more of a company's management staff (Gulzhanat Tayauova, 2012).

2.5 FLEET MANAGEMENT SYSTEM

Fleet Management is a function which allows companies which rely on transportation in business to remove or minimize the risks associated with vehicle investment, improving efficiency, productivity and reducing their overall transportation and staff costs, providing 100% compliance with government legislation (duty of care) and many more. These functions can be dealt with by either an in-house fleet-management department or an outsourced fleet-management provider. (Bekiaris & Nakanishi, 2004)

Vehicle fleet management is the proactive management of an Organization's vehicle assets, which may include light vehicles, heavy vehicles, specialist vehicles and motorcycles. Fleet management covers a range of functions, including vehicle procurement and financing, vehicle maintenance, vehicles telemetric (tracking and diagnostics), driver and personnel management, speed management, fuel management, and health and safety management (Akker,2011). In below we are going to see only three of the functions these are: driver management, Fuel management and Vehicle maintenance management

2.5.1 ADVANTAGES OF FLEET MANAGEMENT SYSTEMS

Nowadays, management and planning as well as control and monitoring of various activities in transportation sectors are considered to be extremely important at a global level and can lead to further developments in economic, social, and even political fields. The fleet management system was developed based on the above approach and made available to applicants and various users so that they could plan the mission, service, and operational vehicle based on actual and exact objective information for the purpose of providing better control and monitoring with due attention to the content of the assigned missions (Dolce, J.E. 1998). The following advantages can be enumerated for this system

- Management of vehicles fuel consumption based on daily, monthly, and annual reports provided for a particular vehicle or a group of vehicles.
- Efficient and exact management of the vehicle fleet and increase supervision capabilities and a common web browser such as, Mozilla or Google chrome.

Promotion of system efficiency and considerable reduction of control and monitoring costs compared with traditional operator-based supervisory systems

- Receiving exact performance and operation information from the vehicles
- Increase the fleet management system efficiency

- Considerable reduction of driving violations during in-service periods
- Increase the customer satisfaction and staff transparency
- Possibility of evaluating the performance of the affiliated organizations
- Standardization of the implemented concepts and forms within the executive organizations for the purpose of correcting the existing methods and preventing subjective trends to govern various processes.

2.5.2 DRIVER MANAGEMENT

Driver management and training should be a core component of any fuel management program. If drivers are not motivated to take part, it is very difficult to achieve sustained reductions in fuel consumption. This is even more crucial in both private and public sectors where vehicle drivers are not necessarily employed as such and may feel they have more pressing priorities than fuel consumption in their primary activities. It is vital to involve these drivers from the outset and to treat them as genuine partners in the program. (Kirk, 1998). Managing fleet drivers effectively can save companies thousands of pounds each year. Through driver training, telematics systems and effective fuel management systems, fleets can reduce costs and mileage while maintaining the same level of service. There are many different procedures and management policies fleets can implement to help to manage company drivers more effectively, from license checks to risk assessments. Training on economic driving, mapping out the best routes and sourcing out the best local prices for fuel are just some of the ways fleets can manage fuel and their drivers to make the most out of the fuel, (Fleet news,2018).

2.5.3 FUEL COST MANAGEMENT

Fuel management systems are used to 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. Fuel management systems are designed to effectively measure and manage the use of fuel within the transportation and construction industries. They are typically used for fleets of vehicles, including railway vehicles and aircraft, as well as any vehicle that requires fuel to operate. They employ various methods and technologies to monitor and track fuel inventories, fuel purchases and fuel dispensed. This information can be then stored in computerized systems and reports generated with data to inform management practices. Online fuel management is provided through the use of web portals to provide detailed fuelling data, usually the back end of an

automated fuel management system. This enables consumption control, cost analysis and tax accounting for fuel purchases, (Lange, H.B.1992).

There are several types of fuel management systems. Card-based fuel management systems typically track fuel transactions based on a fuelling credit card and the associated driver PIN. Reports can then be generated based on fuel consumption by driver, and data can be directly downloaded. On-site fuel management systems may employ fleet refuelling services or bulk fuel tanks at the site. Fuel is tracked as it is pumped into vehicles, and on-site storage levels can be managed. Some fuel companies offer total fuel management systems whereby they provide elements of a card-based system along with on-site fuel delivery and refuelling services. Mobile fuel management refers to a fleet of fuel trucks or tankers which provide fuel supply to commercial fleets of trucks or construction equipment. The increasing use of bio-fuel has introduced another challenge in fuel management. With greater water content, there will be a risk of microbial growth – depending on the storage conditions, the fuel quality will deteriorate over time, leading to clogged filters and loss of productivity, (Hohn, Geoffrey M., 2011).

2.5.4 MAINTENANCE MANAGEMENT

Maintenance, repair and operations (MRO) involves maintaining, repairing, and replacing if necessary devices, equipment, machinery, building infrastructure, and supporting utilities in industrial, business, governmental, and residential installations, (Defense Logistics Agency,2016). Over time, this has come to often include both scheduled and preventive maintenance as cost-effective practices. Scheduled inspections have also come to fall under MRO purview.

More recently, 'predictive maintenance' is being employed, which uses sensor data to monitor a system, then continuously evaluates it against historical trends to predict failure before it occurs. In aircraft maintenance, maintenance, repair and overhaul services also include inspection, rebuilding, alteration and the supply of spare parts, accessories, raw materials, adhesives, sealants, coatings and consumables for aircraft manufacturing and maintenance, repair and overhaul services. The marine transportation, offshore structures, industrial plant/equipment and commercial facilities market sectors depend on scheduled or preventive paint maintenance programmers to maintain and restore coatings applied to steel, and also concrete and masonry

assets in environments subject to attack from erosion, corrosion and environmental pollution,(Garcia et al, 2006).

Although vehicle maintenance policies are predominantly governed by safety, it is important to remember that vehicle performance and fuel consumption are also affected by maintenance standards. Turbochargers, fuel injection systems, tire, axle alignment and oil and lubricants are just a few of the factors that have an impact on fuel consumption and should always be maintained to high standards. It is essential to remind drivers of their responsibility to undertake daily walk-around checks of vehicles. This not only helps to ensure that vehicles remain in legal roadworthy condition, but also helps identify common problems such as oil and water leaks and incorrect tyre pressure. There is also scope to make improvements in the way maintenance facilities themselves are operated (Richardson, N. 2011).

2.6 STEPS FOR OUTSOURCING FLEET MANAGEMENT

A publication of Lyceum College, (Pty) Ltd.,2008 explained well what steps need to be followed in order to outsource fleet management. according to them there are four general steps need to be followed as explained below.

2.6.1 IDENTIFYING GOALS AND NEEDS

In order to make an effective decision, one of the first steps is to identify the strategic requirements of the organization with regard to its fleet operation and understand why outsourcing may or may not be appropriate. Some of the reasons to outsource fleet have access to technology, skills, and knowledge not internally available, improve business processes and enable organizational change Provide needed short-term services without adding to ongoing operational costs focus internal fleet resources on core strategic goals. Reasons to use internal resources (so called in-source) retain skilled resources, obtain fleet processes at lower overall costs, take advantage of employees' unique insight into fleet management, have ownership and control over the fleet resource and personnel assets. Outsourcing implies the utilization of experts from an outside company to perform specific tasks that the company once performed itself. The process of outsourcing formalizes the description of the non-core operation into a contractual relationship between the client and the supplier. Under the new contractual agreement, the supplier acquires the means of production which may include: people, processes, vehicle management, intellectual property and technology, (Pty) Ltd.,2008.

The structure of internal fleet management changes as the organization agrees to pass on the services to the outsourcer for the term of the contractual agreement. It is important to take note of the fact that there must be a contractual agreement between the client (a fleet company) and a supplier (outsource company) to perform a specific function for the client. Managers have sought to use both internal and external resources to meet business needs effectively. External suppliers have been utilized to meet the company's demands but concerns over rising costs and contract effectiveness have led to the need to reevaluate the decision-making process. The decision whether to use internal or external resources must be made by understanding the needs and constraints of internal fleet operations, identifying and prioritizing the goals of the fleet department, identifying and quantifying the appropriate measures for internal and external operations conducting a cost-benefit analysis of the internal and external alternatives, (Pty) Ltd.,2008).

2.6.2 COST/BENEFIT ANALYSIS

Cost-benefit analysis enables decision-makers to account for the full costs and benefits of outsourcing and in-sourcing options. The analysis helps to prove or disprove whether a project supports agency goals and outcomes in the most effective manner. Its value stems from its inclusion of both quantitative and qualitative measures. A simple cost comparison will not show all of the true benefits or costs of a staffing decision, although quantified dollar costs should always be included in the analysis. An outsourced solution may prove to be costlier or require more time but may still be the best solution to meet the needs of the agency or university. Such a decision, however, must be fully documented, with a comprehensive cost-benefit analysis in order to be justifiable. A final consideration regarding internal versus external analysis criteria is the importance of recognizing the full costs of the external vendor. Many times, costs are not explicitly seen, but are accounted for in the fees charged by the vendor. The recognition of these embedded costs is necessary in order to make a consistent comparison between options, (Pty) Ltd.,2008).

Table 3 below has been included to provide examples of costs and benefits to consider when attempting to isolate specific costs and benefits important to the project. The list is not intended to be exhaustive. Instead, it should serve as a beginning point for determining appropriate criteria. Some of the costs may be the same for both options. For example, if external resources are working onsite, they will have the same utilities cost as the in-house resources would have. In the same way, benefits may also be similar.

Table 2.3: Sample list of cost-benefit criteria source, (Pty) Ltd.,2008).

Quantitative direct cost	Insourcing consideration	Outsourcing consideration
Personnel Costs	Yes	Yes
Fringe benefits	Yes	Yes: embedded in the contract
Material/Supplies	Yes	Yes
Maintenance/licenses	Yes	Yes
Training	Yes	Yes
Contracts (for ex. If some maintenance/other peripheral services will still be performed by other vendors).	Yes	Yes
Telecommunication charges	Yes	Yes
New equipment costs	Yes	Yes
New software costs	Yes	Yes
Rent	Yes	Yes
Utilities	Yes	Yes
Travel	Yes	Yes, may be embedded in the contract
Quantitative direct benefits	Insourcing consideration	Outsourcing consideration
Money value staff time saved	Yes	Yes
Money value of new operation efficiencies e.g number of additional licenses to be processed).	Yes	Yes: many be evaluated on the basis of different technical solutions proposed by internal or external resources
Quantitative indirect cost	Insourcing consideration	Outsourcing consideration

Administrative overhead	Yes	Yes- may be embedded in the contract
Divisional overhead	Yes	Yes
Cost other agencies	Yes	Yes
Contract administration costs	Yes	Yes-this include internal resources and time
Quantitative indirect benefits	Insourcing consideration	Outsourcing consideration
Service improved to staff	Yes	Yes
Support of state/agency architectures	Yes	Yes
Flexibility of solution	Yes	Yes
Quantitative Project benefit costs	Insourcing consideration	Outsourcing consideration
Availability	Yes	Yes- may be embedded in the contract
Quality of service	Yes	Yes
Impact on staff other agencies	Yes	Yes
Legal environment	Yes	Yes
Security	Yes	Yes
Sensitivity	Yes	Yes
Planning time project time	Yes	Yes
Flexibility of solution	Yes	Yes
Operational risk	Yes	Yes
Technological risk	Yes	Yes
Relationship risk	Yes	Yes

Once the company's needs and goals have been established; a thorough cost-benefit analysis should be conducted. Organizations must identify all internal and external costs and benefits to make an effective and reasonable comparison.

2.6.3 SPECIFIC COST-BENEFIT CRITERIA

Begin the analysis with statements on the subject of the type of outsourcing under consideration (i.e. maintenance or workshop) and the main project objectives. Costs and benefits will follow from the analysis, because each item is acknowledged and weighted in light of these statements. It is not possible to provide a simple criteria template for an outsourcing versus in sourcing cost-benefit analysis. Each organization or fleet department must determine the criteria, priorities, and weights for each project depending on its individual circumstances. The following criteria, however, are highlighted as important concerns that all internal/external resource decisions should Consider, (Pty) Ltd.,2008).

Important cost-benefit analysis rules

- Benefits are as important as costs. Even if an option may be quantifiably more expensive, it may still be the most effective choice for meeting the organizational needs.
- An outsourcing project will be difficult to justify or support if the project lacks specific, measurable goals and consistent, reliable information about the real costs and benefits of the project

Quantitative Considerations

The total money cost remains one of the primary drivers for management interest in outsourcing.

- **Cost savings** are not always seen in outsourcing arrangements, depending on the reasons behind the outsourcing. For example, workshop and maintenance via outsourcing have provided some cost savings, but integration with current fleet operations tends to rely more heavily on the need for expertise and resources, and can be just as expensive, if not more so, than the use of internal resources, (Pty) Ltd.,2008).
- **Cost avoidance** is also a consideration. Ongoing operational costs that may be avoided by outsourcing should be identified. Like cost savings, cost avoidances are dependent on the reason behind the outsourcing and the type of outsourcing employed. Cost avoidance should not be used as a justification for making an outsource decision but can be considered as a potential benefit that may result from the decision. In the analysis of options, three

general types of **financial costs** should be examined: Project, Management & Ongoing costs, (Pty) Ltd.,2008).

Mohammed Abdur Razzaque ,1998, also explained the main considerations in decision and process of outsourcing. Most of the points are similar to A publication of Lyceum College, (Pty) Ltd.,2008 however it differs in the following contemplations. Make or buy decisions, consider factors related to quality, capacity, labor, scheduling and skill to be important in a make-or-buy decision. The firm also needs to determine the benefits of outsourcing according to some criteria, such as, return on assets and include the risk factor in the sourcing decision. Other considerations included fit with corporate objectives; strengths and strategy; social, political and environmental concerns; secrecy and market conditions. Also listed a proper supplier selection procedure as critical consideration for two reasons: one Good procedure will maximize a firm's chances of picking the third party most suited to its needs & two correct procedures will insure that all the stakeholders can contribute to the selection and as a result, accept the final choice. Internal communication is also equally important. It has been asserted that managers must communicate exactly what they are outsourcing and why - then get the support of every department.

2.6.4 MEASURING THE PROJECT

Measures are crucial to the success of a project, whether using internal or external resources. Measures also quantify the ability of both the internal and the external resources to meet the fleet department's needs. Some measurement points are as follows: Service levels, Price/performance benchmarks, Customer satisfaction surveys, IT systems and reporting systems, Infrastructure and management & opportunities for improvement, (Pty) Ltd.,2008).

Analyze the measures for strengths and weaknesses and evaluate alternative options for making changes. Use the typical SWAT analysis tool to evaluate the option and the prospective supplier. The right measurements are essential for evaluating options available to the organization. Risk identification is an essential part of the analysis process. Risk affects priorities and costs and benefits because of its impact on the outsourcing project's success, For example, using internal personnel who are more knowledgeable of the applicable goals, objectives and strategies of the fleet department's project helps to assure that the project will meet the need of the organization.

Resource issues are another important consideration in this cost benefit analysis. The need to avoid pressuring already overworked resources may be an important consideration in the decision process. Alternatively, it may be important strategically for the fleet department's resources to be involved in a particular process because of the impact of the resource on organizational service delivery. Understanding key staffing questions will enable the agency to identify previously unconsidered costs or benefits. The overall reason why organization and fleet departments are examining costs and benefits of using internal or external resources is to determine the best possible use of limited resources. Deciding that outsourcing is a viable option is usually because of one of two business value reasons:

- If it is determined that an external service provider can meet all business requirements at a cost lower than they can be provided by internal resources
- If benefits are gained that cannot otherwise be achieved

It is the second point that provides the most scope for outsourcing cost-benefit analysis, as the lower cost argument is difficult to achieve, given the frequency of soft costs in outsourcing arrangements and the fact that qualitative costs and benefits may be lost by comparing strict and values. The **intangible “business value”** concept must, however, still be tied down to specific reasons and justifications. After completing a cost-benefit analysis, the agency may still consider that an alternative staffing acquisition method is better than the one shown by the analysis. If this happens, the appropriate weights and concerns have not been shown in the analysis. Establishing project objectives, outcomes, and primary staffing considerations should provide the organization with enough information to show a cost-benefit analysis that provides the best business value outcome. Using both qualitative and quantitative measures ensures that business value is accounted for in the cost-benefit analysis, (Pty) Ltd.,2008).

Another a document written by KIAH consulting ,2016 explained seven steps of successful outsourcing and it is similar with the above listed steps except the following steps

2.6.5 COMMUNICATE

Communicate what you are intending to do early, internally and externally. The service providers are experts at outsourcing. They can give good advice on how best to structure an RFT, what information they need to respond, what the industry standards are and what options allow them to structure a competitive solution. Assumption of risk translates directly to price and the lack of, or ambiguous, information is seen by the outsourcers as high risk. Consider passing out a draft RFT

for comment or, in the most complex arrangements, a two-pass selection process. This gives good feedback and allows early shortlisting, reducing the cost of major tender response preparation and evaluation. Outsourcing, or the fear of the unknown, is debilitating to organizations. This is a major change in an organization; people will be fearful for their future. An information void will be filled with rumor. It is likely that some key people may leave early; develop strategies to hold them and to manage their departure. Be honest from the beginning, communicate your plans, develop and share a retention strategy, (Kiah Consulting,2016).

2.6.6 BUILD A DEAL

Selecting a supplier and signing a contract is relatively easy. Building a deal, where both parties are happy that they are getting value, is harder but significantly more beneficial. A deal of value provides the foundation for a successful relationship. You need the right team. The right team will include a mix of people who know how the organization operates, how things happen. You also need people to lead, to determine what needs to be done. Those within the organizations are generally comfortable with the status quo. Changing the status quo usually means external drive. Don't confuse technical and operational excellence with the ability to change organizations and negotiate lasting supplier relationships. Look for assistance from those who understand the industry, commercial negotiations and commercial contracts. You need a relationship in outsourcing. Traditional contracts and adversarial negotiation destroy the future rather than providing a solid base for a partnership. Seek the art and the science of negotiation. Careful preparation is the key to success. The art is in understanding the signals, the differing values and how to move over the negotiating playing field so that both parties are comfortable that they have value and the deal is clear. The contracts need to be complete and they need to be explicit. The statement of work and the service level agreements must cover this. They also need room for change without fear. Enshrine principles of doing future business. This provides a better long-term footing than a simple service supply agreement, ,(Kiah Consulting,2016).

2.6.7 LEADERSHIP AND MANAGEMENT

Signing the deal is only the beginning. Most outsourcing contracts run for 3–5 years with options to extend. This is a long-term relationship that warrants attention and effort. It will be difficult in the beginning as both parties work with good will but clash over different ideas of delivery and unexpected shortcomings in the contracts. It takes strong leadership, courage and confidence to keep the organization on the path. Behave reasonably and be prepared to adjust the contract, the statement of work and the service levels. This is not to give away value but adjust the value—an ongoing negotiation while the contract and service bed down. Keep your negotiating team for a few months for this transition. Their corporate knowledge will be invaluable. As an added benefit, if the negotiators know they have to deliver on what they promise, they take more care. Demand the same from your service provider. In the long term, establish the right management team. It will be different to what you had before outsourcing for they will be managing a service provider not service delivery. Long-term relationships take effort, so do not skimp. Expect to spend between 5 and 10 per cent of the total deal price on the relationship management, (Kiah Consulting,2016).

2.7 OPERATIONAL PERFORMANCE

Is defined as an organization's performance measured against standard or prescribed indicator of effectiveness, Efficiency and Environmental responsibility such as; Cycle Time, Productivity, Waste reduction and regulatory compliance. Measuring the 4 performance of an organization is key to the continual improvement process. You can't effectively manage what you don't measure since you will not know if you are getting better or worse. (Handly and Benton, 2009) recommended that future empirical efforts could investigate whether a more complete contract when used in conjunction with other “enforcement” practices (e.g. monitoring, inspections, audits) would significantly influence performance outcomes. It was also mentioned by (Saxena and Bharadwaj, 2009) that performance monitoring and control is considered one of the main outsourcing management competencies from the client side. Performance Monitoring and management refers to which extent the outsourcing firm has developed clear processes and appointed required resources to monitor and control performance of every individual process. Firms that outsource their business usually follow a “process portfolio” approach and continuously monitoring the performance of all their processes (Joyce. M. Alwanga,2015).

2.7.1 PERFORMANCE METRICS

Metrics are measures of output or results. While some managers use "words" to describe results, metrics require the use of numbers to more accurately "describe" output or performance. When they are correctly developed, metrics take away all doubt about what was and was not accomplished and whether the program actually met its goals. The types of metrics have an added feature in that they also provide a standard, against which you can compare your performance. And as a result, you can more clearly see how you are doing because the metric includes a "benchmark standard number" which allows you to easily compare your results to a standard. Metrics generally cover five assessment areas including quantity, quality, time, money and satisfaction (John Sullivan, 2004). According to (Neely, Gregory, and Platts 1995), performance measurement is defined as the process of quantifying the efficiency and effectiveness of action. In other words, it helps an organization assess the performance of its processes regarding effectiveness and efficiency and is credited as the most important tool to support governance and control (Weimer 2009).

2.7.2 What Metrics Should Be Used?

The first step in determining what metrics you need is to make a list of your outsourcing goals and to develop a separate metric (or series of metrics) to measure whether each goal is met, (John Sullivan, 2004). According to Christopher A. Horning, (2014) Over the years Organizations have come to rely on SLAs (Service Level Agreements) to manage outsourced support functions. There are three significant flaws using only SLAs to manage your business.

- a. Predominantly measures only the efficiency aspects of the relationship: this stems from the fact that the right from the initial stages of the engagement, customer needs are often determining from narrow singular perspective with little to no room for an equal discussion of strategy and implementation approach on both sides.
- b. Business dynamics change but the SLAs remains constant throughout the engagement duration: SLAs and contracts are still considered to be static.
- c. Intrinsic value or business impact on the relationship does not get measured or values: SLAs mostly rely on metrics such as quality productivity, customer satisfaction, etc. while these metrics do provide a view of whether the relationship on track, they do not offer insight on value, innovation or complete business impact delivered.

The most commonly used tool in the outsourcing environment is the Balanced scorecard (BSC) approach providing executives with a comprehensive framework that translates a company's strategic objectives into a coherent set of performance measures .BSC uses the category of finances, customers, processes and innovation and growth to keep track of the execution of activities/actions by the staff/ department/ business functions and to monitor the consequences arising from these actions (Kaplan and Norton 1992). The data gained has to be used to find solutions to problems and by that improve the supply process.

(1) Financial perspective indicates whether a company's strategy, implementation and execution are contributing to bottom-line improvement. The measurement criteria are usually profit, cash flow, ROI, return on invested capital, and economic value added.

(2) Customer perspective provides a way for managers to identify the customer and market segments in which the business unit will compete and the measures of the business unit's performance. To meet the organizational objectives and customers' expectations, organizations must identify the key business processes at which they must excel.

(3) Internal business perspective aims to satisfy shareholders and customers by excelling at some business process.

(4) Innovation perspective identifies the infrastructure that the organization must build to create long-term improvement (i.e., employee satisfaction, continuity, training and skills, etc.).

Moreover, Sanjay Chaudhary & Rajiv Kishore, 2010 used Metrics to measure the outcome of outsourcing performance valuing the outcome in terms of financial, strategic, operational performance and relationship Quality. According to them there should be relevant metrics for outcome measurement of outsourcing engagements and its improvement by deploying effective governance. Few criteria that should be used for defining and implementing outsourcing outcomes measurement metrics include:

- Incorporation of Subjectivity and approximations to deal with individual perceptions and human judgment
- Facilitation of discussions in-house as well as with outsourcing service provider about interpretation, performance improvement, and improvement in the quality of relationship
- Collaboration to jointly diagnose and solve problems, and
- Enabling the outsourcer company and its service providers to assess the value they receive from their relationship

Based on the above, they categorize the comprehensive list of outcome measures with respect to outsourcing are financial value, strategic value, operational performance & quality of service and relationship. However, for this study we are going to measure the impact of outsourcing against the objective of outsourcing.

2.8 MEASURING OPERATIONAL PERFORMANCE USING THE OBJECTIVES OF OUTSOURCING LOGISTICS SERVICES

According to Carlos Sanchís-Pedregosa, (2012) identifying the objectives of outsourcing logistics services as a basis for measuring its Financial and operational performance will help to evaluate the success of outsourcing. Moreover, he has listed 10 outsourcing objectives as a basis to measure the operational performance of a firm & evaluate the impact of outsourcing. These are Cost saving, focus on primary activity, improved flexibility, improved customer service, access to latest technology and expertise, improved return on asset, supply chain productivities, access to unknown market, supply chain re-engineering and inventory turnover. However, for this study we only use 3 of outsourcing objective listed below as a metrics to assess the impact of outsourcing on operational performance of ILRI.

2.8.1 FOCUS ON PRIMARY ACTIVITY

Outsourcing non-core competencies allows company to focus on its core, assign more staff to it, resulting in higher worktime and talent dedicated to the core competency. Reassess internal processes and tasks to create ideal environment for cultivation of core competencies (Prahalad & Hamel 2006). Once a company identifies and outsources non-core competencies it gains ability to reshape its strategy around its core competencies allowing the best use of scarce resources, skill, talent and time of staff. It simultaneously helps to communicate toward employees what tasks are the most important and yield the highest added value for company. Additional benefit of this approach is that if company correctly identifies non-core competencies performed in-house, then most likely peripheral activities were assigned only little attention and probably suffered capital insufficiencies. When this peripheral activity is outsourced it becomes the core competency of the vendor, therefore being in center of attention and is performed using up-to-date technologies. In addition to that, it is assigned much higher capital investment and more skilled staff is performing the outsourced activity. Combination of these factors often results in significantly increased output quality, (Vladimír Štřáteský, 2016/17).

2.8.2 IMPROVED FLEXIBILITY

When a company outsources an activity there is a shift in the fixed costs produced by that activity to a cost variable that is settled with the supplier depending on the volume of work done by the supplier during a set, (Brown, D. and Wilson, S. 2005). Reducing fixed costs to the benefit of variable costs is therefore one of this objective's fundamental dimensions. When the transport function is outsourced, for example, the maintenance expenses for the fleet of vehicles, the cost of drivers, etc. become a variable cost that depends on the volume of work outsourced. This means that the company adapts more easily to variable demand and reduces the risk of resources being underused, (Carlos Sanchís-Pedregosa,2012). Other dimensions to be taken into consideration that are related to flexibility outsourcing can give your company an "edge" over organizations who fall into the economic trap of "Jack-of-all-trades, master of none". Realistically, expertise is limited to a particular field; it is highly unusual to find an individual – or even a group – that can be self-sufficient and competitive in each area. In other words, it is virtually impossible to hire in-house "experts" in every field necessary to run a company. Outsourcing, however, allows your company to utilize the experts while maintaining focus in its primary (product or service) field. This, in turn, creates more flexibility and opportunity for your company to move forward: in an economy rich with mergers, divestitures, and new business launches, outsourcing can help your company stay "nimble" to better manage business change, (Business plans ,2018).

2.8.3 IMPROVED CUSTOMER SERVICE

According to Agency Theory (Eisenhardt, K.M. 1989), a company decides to outsource a service if it thinks that the agent (the company outsourced to) is capable of carrying out said service in a more effective way than the company that is outsourcing can do itself. In logistics these improvements in the service translate into the following dimensions: reduced delivery times, on-time deliveries, and fulfilling customer expectations for quality of service (Sum, C-C., Teo C-B. and Kwan-Kee, N. ,2001). This then has a knock-on effect and increases customer satisfaction, which in turn contributes to improved company competitiveness (Holmstrom, J.B. and Aavikko, P. ,1994).

2.8 EMPIRICAL FINDINGS

There are several empirical and theoretical studies of outsourcing list the benefits of outsourcing based on theoretical explanation. There are limited studies found in evaluating or assessing the effect of the outsourced functions on operational performance. Some thesis papers like (Birhanu Anosse, 2016) & (Selamawit Shitaye 2016) tried to see the outsourcing practice, challenges and opportunities in their respective organization however the researcher disagree with the methodology both used which is purposive sampling. Since all the disadvantages of purposive sampling methods are there: unknown proportion of the entire population is not included in the sample group i.e. lack representation of the entire population, lower level of generalization of research findings compared to probability sampling & difficulties in estimating sampling variability and identifying possible bias. In summary, the researcher believes that there are limited research studies in the area, those who studied the area have lack of generalization because of the used methodology.

Another study by (Solomon Mesgebu 2016) tried to assess the practice of outsourcing practice in his organization however his findings suggests that there is no monitoring and controlling mechanism in place. Therefore, it shows that it is difficult to determine its effect since he hasn't mentioned what controlling and monitoring mechanism required to assess its effect on operational performance, though the employees have positive attitudes towards the outsourcing practice according to his findings.

An article written by Chenlung Yang, John G. Wacker & Chwen Sheu, (2012) tried to address the question of what makes outsourcing effective? Based on a transaction cost economics (TCE) analysis. It is a theoretical framework to determine an effective institutional structure (markets versus hierarchies) and associated governance mechanisms for supply-chain transactions (Grover and Malhotra 2003, Vivek et al. 2008, Williamson 2008). TCE posits that the alignment of transaction attributes (asset specificity, uncertainty, frequency of transaction, ease of performance assessment) and institutional structure leads to higher transactions efficiency. The Authors also believes that the formal governance mechanism of a business transaction which is contract & all aspects of an inter-organizational transaction are likely to be completely detailed by the contract (Handley and Benton 2009). Consequently, an additional control mechanism such as relational adaptation (buyer-supplier collaboration, joint problem-solving, and information-sharing) becomes necessary for settling contractual disputes and safeguarding completion of transactions

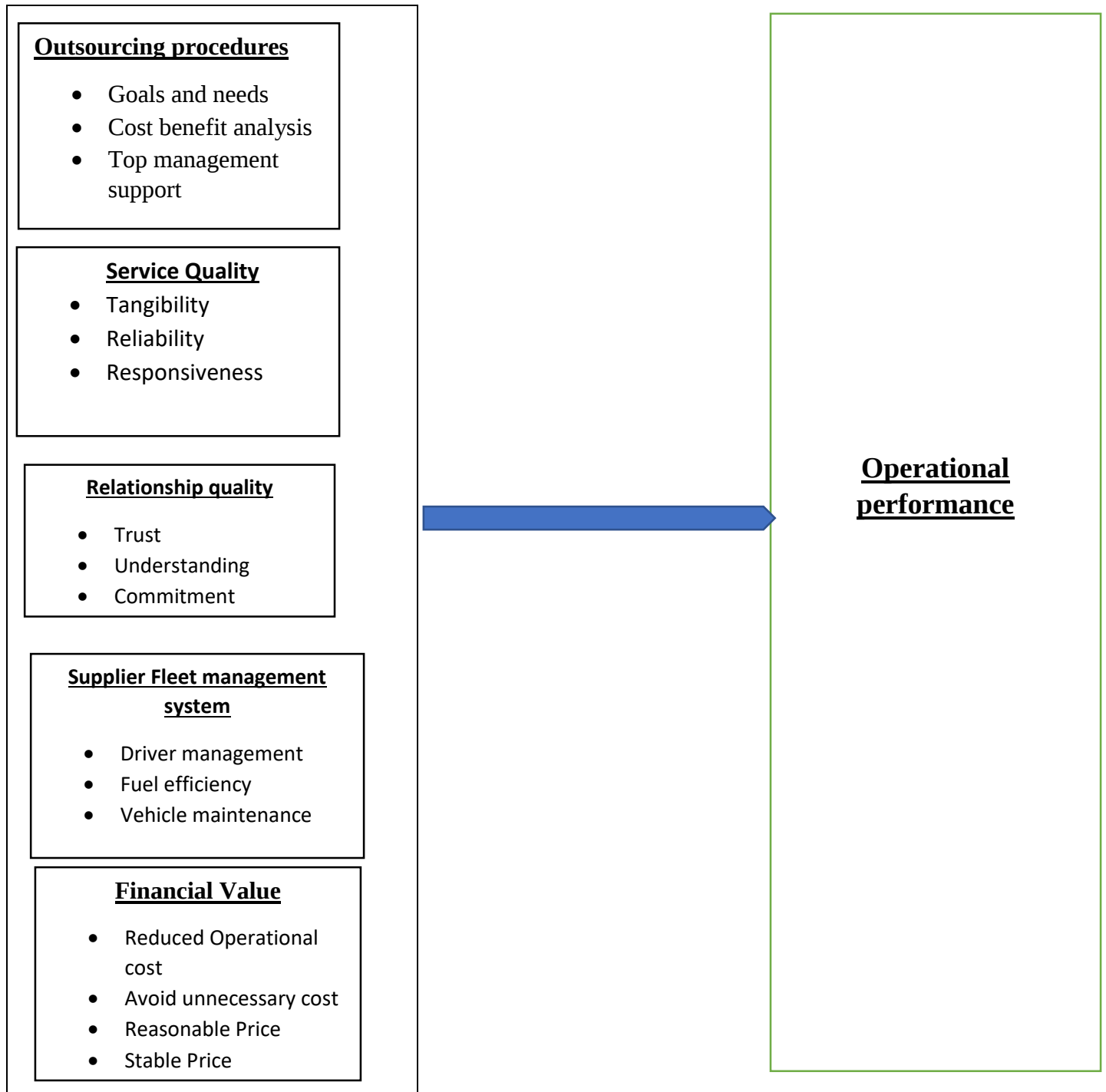
(van Hoek 2000). Their research result also confirms that firms rely on both types of governance mechanisms to safeguard against special investment, risk, and performance ambiguity, which lead to manufacturing competitiveness. However, they have not mentioned the parameters to be used in order to determine the effect of the outsourced business on operational performance. Therefore, the researcher believes that this gap needs to be filled by assessing the effect of outsourced business on operational performance against performance indicators or outcomes.

Md. Sarifuzzaman, (2012) on his thesis paper studied the Impact of Outsourcing on Company Performance, the paper tried to compare performance of his company who outsourced its some of business functions with others similar electric power supply companies who do not outsource their business functions. The Author collected three years data and tried to analyze based on the companies' number of employees required to the power supply demand, expenditure to employees & financial statement of the companies. The conclusion said that outsourcing has impact because their result showed his company who outsourced its business function has better performance compared to the others who didn't outsource their business function. Therefore, there is a gap that the only factor for improved performance is not outsourcing however it is one factor. Therefore, the paper should have been good if explained the other factors like using technology system improvement etc. remained constant or the same for all companies. The paper is also explained the performance in terms of number of employees, expenditure and financial report but the quality of the service, the delivery time of the service other performance parameters wasn't explained well. Hence, the researcher believe that this gap also needs to be filled.

2.9 CONCEPTUAL FRAMEWORK

Independent variables

Dependent Variables



Conceptual frame work: - Own for this study

CHAPTER THREE

RESEARCH DESIGN & METHODOLOGY

3.1 INTRODUCTION

Kothari (2005) defined research methodology as a science of studying how research is done scientifically. It contains details about the research approach, research design, sample size and sampling techniques, data source, data collection instruments, data analysis, reliability and validity of the study, model specification and finally ethical considerations

3.2 DESCRIPTION OF THE STUDY AREA

ILRI is a non-profit-making and non-governmental organization with headquarters in Nairobi, Kenya, and a second principal campus in Addis Ababa, Ethiopia. The employees are over 700 staff from about 40 countries. About 80 staffs are recruited through international competitions and represent some 30 disciplines. Around 600 staffs are nationally recruited, largely from Kenya and Ethiopia (Adopted from ilrinet). In Ethiopia ILRI found in Addis Ababa located around Gurdshola CMC road.

ILRI works to improve food and nutrition security and reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock. It is the only one of 15 CGIAR research centers dedicated entirely to animal agriculture research for the developing world. Co-hosted by Kenya and Ethiopia, it has regional and country offices and projects in East, South and Southeast Asia as well as Central, East, Southern and West Africa. <http://www.ilri.org> retrieved on June 25,2018.

Before outsourcing the fleet management functions ILRI Transport unit comprised two sections which provide vehicle related services. Both sections were supervised by their respective supervisors and managed by a Transport Manager. The first section was Transport Pool section where the basic function of the unit, that is, vehicle dispatching was handled. In this section one Transport supervisor, one data and documentation clerk and eight drivers were regularly employed and had been providing service according to their job descriptions,

The other section of the transport unit was the workshop supervised by a head mechanic. It had been providing vehicle maintenance and repair service which basically was preventive maintenance. The section had seven regular employees of different technical skills and levels.

The effectiveness of the research is highly dependent on the service provided by fleet management where the fleet management is expected to provide efficient & effective service in order to fulfil the institute objective. Therefore, the study assessed how employee perceived the effect of outsourced fleet management functions on operational performance of the ILRI.

3.3. RESEARCH DESIGN & APPROACH

Research design provides an overall guide for the collection and analysis of the data of a study (Churchill, 1979). The importance of the research design stems from its role as a critical link between the theory and argument that informed the research and the empirical data collected (Nachmias, 2008:245). A choice of research design reflects decisions about the priority being given to a range of dimensions of the research process (Bryman & Bell, 2007:40), and this, of course, will have considerable influence on lower-level methodological procedures such as sampling and statistical packages. Therefore, it is a blueprint that enables researchers to find answers to the questions being studied for any research project. Together with the clear research plan it provides, constraints and ethical issues that a study will, inevitably, encounter must be taken into account (Saunders et al., 2003). Each study follows a unique methodology in order to fulfil the purpose of that study.

Nominal scales have been used for questions that deal with the survey participants' demographic characteristics such as roles of participants and their education levels. Interval scales will be used for questions that deal with participants' years of experience. Likert scale was utilized for questions which relate to outsourced activities, outsourcing decisions, respondents' opinions about the impact of outsourcing on performance of the institute.

In order to describe and examine the current practices of ILRI's outsourced fleet management, the study employed explanatory research design. This causal/explanatory research design was adopted to identify the variables that affect operational performance. Furthermore, descriptive research was used to describe the characteristics of the population.

3.4 POPULATION AND SAMPLE SIZE

The target population of this study was employees of ILRI Ethiopian Campus who have been working in ILRI Ethiopia campus six years and above. The fleet management functions were outsourced five years ago therefore the effect of outsourcing the fleet management functions on the operational performance can be realized by the people who have been there before and after the outsourcing of the fleet management functions. Hence, from the internal data the number of

staffs who have been in ILRI for more than six years are 83. Therefore, the researcher used census data since the population size is reasonable to conduct census. Furthermore, conducting a census often results in enough respondents to have a high degree of statistical confidence in the survey results & it also gives everyone the opportunity to provide feedback.

3.5 DATA TYPE AND SOURCE

To assess the effect of outsourcing the fleet management functions on the operational performance of the institute, the researcher used both primary and secondary data sources. In regard to the primary data Questionnaires from the respondents of the organization was used to collect data with hand delivered to the respondents. The secondary data was collected from the organization websites (internet), books, literatures, journals, and other available sources and this was also quoted where necessary and used to draw conclusions as per the study.

3.6 INSTRUMENT OF DATA COLLECTION

Based on the research objective, a questionnaire was prepared to staff members to get information about the effect of outsourcing of the fleet management functions on the operational performance of ILRI. The questionnaire consists of two parts. Part one is prepared to gather general information about the respondent's gender, educational level, work experience, & department. Part two is prepared to ask respondents to answer the effect of outsourcing fleet management functions on the operational performance of ILRI. This part consists of multiple questions and measures the level effect of outsourcing the fleet management functions on the operational performance. The questions were Seven in general. The first question is about the reason of outsourcing fleet management functions. The second question deals about the procedure of outsourcing fleet management. The third question is about the supplier service quality. The fourth question deals with the supplier fleet management system. The fifth question is financial value gained by outsourcing the fleet management functions. Six question is the relationship quality with the supplier. and the last question was about the operational performance of the institute. The Questions in part two are assessed by using a five-point Likert scale. Each question of the questionnaire is assigned a number indicating strongly agree measured as 1, agree measured as 2, no opinion measured as 3, Disagree measured as 4, and strongly Disagree measured as 5. And for the operational performance used 1 Very High, 2 High ,3 Neutral ,4 Low, 5 Very low.

3.7 DATA ANALYSIS

The study utilized mainly quantitative data analysis techniques. Inferential statistics such as ordered logit model were employed in order to answer the basic question. And, descriptive statistics such as mean, percentage and frequency tables were used to describe the data. The study incorporates five independent variables in which all of them were measured on a 5-point Likert-Scale, with “1” stands for “Strongly Agree” and “5” stands for “Strongly Disagree”. Apparently, mean is used as a measure of central tendency. Furthermore, the data were encoded, processed and analysed using SPSS.V24 and the relationship between variables is determined with regression analysis, specifically model specifications explained in below.

3.7.1 Model specification: ordinal logistic regression

If the dependent variable has ordered categories (i.e. the order of ranked variables is meaningful but the distances between them are arbitrary), you can use ordered logit. For some variables, the order is much clearer than for others, but always it is important to take care of whether it is the only possible order or if something else is there which makes sense better (Sarkisian 2004). According to Williams (2015), for ordinal dependent variable there are four different ways of treating the dependent variable. The first option is treating the variable as continuous and running the usual OL regression or other techniques for continuous variables. The second option was ignoring the ordinality and treating the variable as nominal, i.e. use multinomial logit techniques, the third option was treating the variable as measured on a true ordinal scale like the professorial ranks of Full Professor, Associate Professor and Assistance Professor, they are ordered but it may or may not reflect crude measurement of some underlying continuous variable; the last option was treating the variable as though it were measured on an ordinal scale, however, the ordinal scale represent crude measurement of interval/ratio scale; For example, the categories “High, Medium, Low”. Accordingly, this study considers the dependent variable as true ordinal scale.

In this study, operational performance was measured using a single-item measure. Respondents were asked to rate the effect of outsourcing fleet management functions on the operational performance of the institute using a five-point Likert scale, ‘Strongly Agree’, ‘Agree’,

‘Undecided’, ‘Disagree’ and ‘Strongly Disagree’. The outcome variables for respondent response were ordered and categorical, the most appropriate econometric estimation method to apply is ordinal logistic regression (Green 2000). The ordered logit models have come in to wide use as a framework of analysing ranked responses (Parasuraman *et al.* 1988). Furthermore, according to Williams (2015) Ordered logit models are among the most popular ordinal regression techniques, however, the assumptions of these models are often violated, the parallel lines/proportional odds assumption often does not hold. Hence, this study employed ordinal logistic regression model and the functional form of ordered logit model for the effect of outsourcing fleet management functions on the operational performance of the institute:

$$Y^* = \sum_{k=1}^k \beta_k X_{ki} + \varepsilon_k \quad (1)$$

Y^* is a continuous, unobserved and unmeasured latent variable whose values determine what the observed ordinal variable Y equals

ε is a random disturbance term with zero mean and a standard normal or logistic distribution: $\varepsilon \sim N(0, 1)$. The continuous latent variable Y^* has various threshold/cut-off points. (κ is the Greek small letter Kappa.). The value on the observed variable Y depends on whether or not you have crossed a particular threshold/cut-off point. Thus, when $M=3$, what we do observed is;

$$\left. \begin{aligned} Y &= 1, \text{ if } Y^* \leq \mu_1 \\ Y &= 2, \text{ if } \mu_1 < Y^* \leq \mu_2 \\ Y &= 3, \text{ if } \mu_2 < Y^* \leq \mu_3 \end{aligned} \right\} \quad (2)$$

Where: Y , is observed in j number of ordered categories, μ s are unknown threshold/cut-off point parameters separating the adjacent categories to be estimated with β s. The continuous latent variable Y^* can be rewritten as;

$$Y^* = \sum_{k=1}^k \beta_k X_{ki} + \varepsilon = Z_i + \varepsilon_i \quad (3)$$

The Ordered Logit Model estimates part of the above:

$$Y^* = \sum_{k=1}^k \beta_k X_{ki} + \varepsilon = E(Y^*) \quad (4)$$

Note that, because of the random disturbance term, the unmeasured latent variable Y^* can be either *higher* or *lower* than Z . Note also that there is no intercept term. You then use the estimated $M-1$ cut off terms to estimate the probability that Y will take on a particular value. In this case since $M=3$, the formulas are:

$$\begin{aligned} P(Y = 1) &= \frac{1}{1 + e^{Z_i - k_1}} \\ P(Y = 2) &= \frac{1}{1 + e^{Z_i - k_2}} - \frac{1}{1 + e^{Z_i - k_1}} \\ P(Y = 3) &= 1 - \frac{1}{1 + e^{Z_i - k_2}} \end{aligned}$$

The cumulative probabilities can also be computed using the form:

$$\text{Prob}(Y = j) = 1 - L(\mu_{j-1} - \sum_{k=1}^k \beta_k X_k)$$

Where: $L(.)$ represents cumulative logistic distribution

3.8 OPERATIONALIZATION

Impact of outsourcing on Operational Performance: Operational Performance explained with five independent variables namely: Procedures of Outsourcing, Service Quality, Financial value, relationship Quality and Supplier fleet Management.

Procedure of outsourcing: has five items like, there were clear goals and needs identified, cost benefit analysis has been made before outsourcing etc.

Service Quality: has four items like service is available whenever it is required, service is delivered as per agreed standards, service is delivered in reasonable time frame etc.

Supplier fleet management: has four items and explained in terms of well-maintained vehicles are supplied by the supplier, drivers of the supplier are well trained and professional etc.

Financial Value: has four items and explained in terms of stable price, reduced operational cost, avoid unnecessary cost etc.

Relationship Quality with the supplier: has five items like Issues(difficulties) are handled professionally by the supplier, there is mutual understanding b/n the supplier and the institute, conflicts are handled properly by the supplier etc.

3.9 VALIDITY AND RELIABILITY OF THE STUDY

3.9.1 VALIDITY OF THE STUDY

Derived from the Latin term validates, meaning “strength,” validity is a term used in both qualitative and quantitative research. It asserts that a finding can never truly be proven; it can only be argued (Trochim, 1999). In quantitative research, there are several ways in which to establish validity. Here, validity assumes a different meaning to the meaning used in studies. Validity refers to how well an instrument measures what the researcher wants to evaluate. However, items in the Questionnaire were prepared using a five-point Likert-scale close ended multiple questions. In order to ensure validity of the instrument some SPSS lecturers, Research Methods lecturer, and some ILRI employees requested to examine it and they had assured the validity

3.9.2 RELIABILITY OF THE STUDY

The research instrument concerns the extent to which the instrument yields the same results on repeated trials. The process of pilot testing (testing and retesting) of the questionnaire assisted in ensuring reliability of the questionnaire in soliciting responses (Cook & Campbell, 1979:37)

The most significant tool preferred to the reliability and internal consistency of the findings is Chronbach Alpha Statistics. Chronbach Alpha result should be above 0.70 to obtain a reliable scale and any scale with Chronbach Alpha which is less than 0.70 has to be excluded (Sekaran & Bougie, 2013). The Chronbach alpha result from the pilot survey will be presented below.

Table 3.1 Reliability test

	Cronbach's Alpha	N of Items
Procedures of outsourcing	0.770	5
Quality of service	0.770	5
Fleet management	0.847	6
Cost of outsourcing	0.736	3

Source: own survey 2018

3.10 ETHICAL CONSIDERATION

First the researcher received permission from ILRI Ethiopia Administration to undertake this study and clarify that the study is for academic purpose only. Next the respondents was informed about the purpose and intention of the study and verbal consult was obtained for better participation engaged in the study. Moreover, participants were informed that they have the rights to decline to participate and to withdraw from the research after it has started.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter deals with data presentation, interpretation and analysis of the study. It has two main parts: the first part is demography of the respondents; the second part consist of data collected from the respondents through questionnaires. In order to address the research questions, 83 questionnaires were prepared and distributed to ILRI employees, out of these questionnaires 71 were filled and returned, the rest 12 questionnaires were unreturned, and no questionnaires were discarded due to missing data.

4.2 DEMOGRAPHY OF RESPONDENTS

A total of 71 responses out of the 83 questionnaires sent out were received, achieving an acceptable response rate of 85.5% and all the questionnaires were edited and checked for completeness and used in the data analysis. This response rate was good and representative and conforms to Mugenda and Mugenda, (2003) stipulation that a response rate of 50% is adequate for analysis, a response rate of 60% is good and a response rate of 70% and over is excellent.

Table 4.1 Educational Level and Gender Cross Tabulation

Count					
		Gender		Total	%
		Male	Female		
Educational level	Diploma	10	0	10	14.08451
	Degree	10	11	21	29.57746
	Masters	19	13	32	45.07042
	PHD	3	0	3	4.225352
	Others	3	2	5	7.042254
Total		45	26	71	100

Table 4.1 shows that there were 45 (63.4%) male and 26(36.6%) female respondents. Furthermore, 4.2 % of the respondents were PHD holders, 45% of the respondents were master's degree holders, 29.6% of them were degree holders and the rest 14.08 % and 7.04 % diploma and another certificate holder respectively. In terms of proportion, majority of male respondents were master's holders followed by, degree, diploma and PHD respectively. Similarly, majority of female

respondents were master's holders followed by degree. 75% of the respondents are degree and above degree holders which shows that they have adequate qualification to understand and respond the Questionnaire which makes the data and analysis more reliable.

Table 4.2 Current position in the institute and gender Cross tabulation

Count					
		Gender		Total	%
		Male	Female		
Current position in the institute	Manager	8	3	11	15.49296
	Supervisor	10	7	17	23.94366
	Admin staff	13	12	25	35.21127
	Technical	6	0	6	8.450704
	others	8	4	12	16.90141
Total		45	26	71	100

Table 4.2 shows that the current position of respondents in the institution, there were 25 (35 %) admin staff, 17(24%) supervisors, 11(15.5 %) managers and 6 (8.4 %) of respondents were in the technical position & 12 (16.9%) were staff who are working in other positions. Moreover, majority of male and female respondents work in the admin position. As it is seen 35% of the respondents from Admin, since most of the admin staff are the one who have exposure with the service and the provider the collected data gives the true image of the service and its impact on the operational service.

Table 4.3 Work experience in the institute and gender Cross tabulation

Count					
		Gender		Total	
		Male	Female		
Work experience in the institute	6-10 years	15	13	28	39.43662
	11-15 years	18	8	26	36.61972
	more than 15years	12	5	17	23.94366
Total		45	26	71	100

Table 4.3 shows that, there were 3 categories of work experience; 6 to10, 11 to 15, and above 15. Accordingly, the first category accounts 39.4 % of the respondents; the second set who had 11 to 15 years of experience was 36.6% of the respondents. The last 24% of the respondents had more than 15 years of work experience. Moreover, majority of female respondents are in the first category followed by second and third category. Majority of male respondents are in the second category followed by first and second category.

Since, the demographic characteristics of respondents, the lion share is taken by male. Besides, the large number of respondents who participated in the study has worked from 11 to 15 & Above 15 years in the institute compared to the first category. This indicate that, the work experience of the respondents had adequate exposure to the work area and had a potential of responding reliable responses.

4.3 DESCRIPTIVE ANALYSIS

Murry.J.(2013) used a kind of rule of thumb to create equal intervals for a range of five points Likert scale (that ranges from strongly agree to strongly disagree in the survey questionnaire). Furthermore, for Likert scale data from 1 (Strongly agree) to 5 (Strongly Disagree) if the sample is approximately normally distributed the interpretation should be intended for mean up to 2.8 is “Agree”, mean between 2.9 and 3.2 is “Neutral”, and mean above 3.21 is “Disagree” (Scott 1999) cited on (Lilian Kemunto Onsongo,2016). Therefore, the decision of each variable statistics is done based on these criteria.

In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the mean. The mean is a poor fit of the data. Standard deviation is a measure of how well the mean represents the data (Field 2009). All of the variables were measured using a five-point Likert scale where 1 stands for Strongly Agree and 5 stands of Strongly disagree. Therefore, the interpretation made using the mean of each variable, as a matter of fact the mean falls between the two ranges, hence if the mean approaches to 1 the interpretation would be the respondents agree on the raised issue or variable and if it approaches to 5 the reverse would be true.

Table 4.4. Reasons for Outsourcing the Fleet Management Functions

	N	Mean	Std. Deviation
To reduce operating costs	71	2.4366	0.87395
To improve quality	71	3.3803	0.99090
To concentrate on the institution core business	71	2.4789	0.85955
To have access to the latest technologies	71	3.7606	0.93296
ROFMF	71	3.0141	0.91434
Valid N (listwise)	71		

Table 4.4 showed reasons for outsourcing the fleet management functions .The first reasons which the respondents gave lower mean score (which is agreed) was to reduce operating costs which is the mean score of 2.43 and the second reasons of outsourcing is concentrate on the institution core business which is the mean score of 2.47 hence, the above two variables lays in agree level therefore the reason behind outsourcing fleet management is to reduce operating costs & to concentrate on the institution core business. Which is similar to with a study of (Carlos Sanchís-Pedregosa & et.al,2012) on hierarchy of objective of outsourcing which suggest that the first two objective of outsourcing are cost saving and focus on core competency. On the other hand, the reasons to outsourcing the fleet management functions is to improve quality which is the mean score of 3.38 , to have access to the latest technologies which is the mean score of 3.76, these two variable indicates that the mean score lays in disagree level , which means, to improve quality and to have access to the latest technologies were not the reason of outsourcing fleet managements

function in ILRI. And the average mean for reasons for outsourcing the fleet management functions had a means score of 3.01.

Table 4.5 Procedures of outsourcing

	N	Mean	Std. Deviation
There were clear goals and needs identified which showed outsourcing was appropriate for the institute	71	3.3521	1.00141
Cost benefit analysis has been made before outsourcing decision	71	2.8873	0.91884
Clear understanding of all the options available before the outsourcing decisions	71	3.0563	0.90849
There were top management supports for the outsourcing decision and procedure	71	2.2254	0.83147
The outsourcing decision was clearly communicated to staff	71	2.9296	1.21095
POO	71	2.8901	0.97423
Valid N (listwise)	71		

Table 4.5 showed that, Procedures of outsourcing were one of the predictable variables that have an effect on operational performance, the first assessment which the respondents gave lower mean score was the question about , there were top management supports for the outsourcing decision and procedure which is the mean score of 2.22, which means there is an agreement on the issue of top management support for the outsourcing decision, and the next question is cost benefit analysis has been made before outsourcing decision which is the mean score of 2.88 which lays on neutral level. The outsourcing decision was clearly communicated to staff with the mean score of 2.92 this also falls in neutral , clear understanding of all the options available before the outsourcing decisions which accounts the mean score of 3.05 again this also falls in neutral position. , there is disagreement on the issues of there were clear goals and needs identified which showed outsourcing was appropriate for the institute, the mean score is 3.35. The average mean for procedures of outsourcing had a means score of 2.89 which indicate the score of this variable shows neutral level. As a result, the analysis shows that procedures of outsourcing were one of the foreseeable variables that are predicted to have an effect on operational performance.

Table 4.6 Service quality

	N	Mean	Std. Deviation
After the outsourcing decision service is available whenever it is required	71	3.1408	1.08622
Service is delivered by the supplier as per agreed standard	71	3.3662	0.94475
Service is delivered by the supplier in reasonable time frame	71	3.0704	0.88356
The supplier is flexible in delivering staff demands	71	3.0000	1.01419
SQ	71	3.1444	0.98218
Valid N (listwise)	71		

Table 4.6 indicates quality were one of the variables that are assumed to change operational performance. The respondents mean scores for all the questions are as follows the first request ,after the outsourcing decision service is available whenever it is required which is the mean score of 3.14 & the second , service is delivered by the supplier as per agreed standard with mean score of 3.36 and the third is service is delivered by the supplier in reasonable time frame which is the mean score of 3.07, and the last the supplier is flexible in delivering staff demands which accounts 3.0. .Accordingly, the analysis shows that service quality had a total mean score of 3.14 which is neutral it indicates that there is somehow a gap on service quality since the respondent didn't realize the impact of service quality on the operational performance of ILRI. The study by (Ramlah Hussein et al,2007), in the context of Malaysian organization discovered that service quality is a significant predictor of outsourcing success. Therefore, to realize the success of outsourcing service quality need to be improved so that the impact will be seen on operational performance.

Table 4.7 Supplier Fleet Management

	N	Mean	Std. Deviation
Well maintained vehicles are supplied by the supplier	71	3.2676	1.02759
Drivers of the supplier are well trained and professional	71	2.8310	0.94091
The supplier has efficient way of controlling fuel consumption of vehicles as fuel cost is covered by the institute as per usage	71	3.0141	0.93340
The supplier has clear way of communicating fuel consumption to customers	71	3.113	0.9935
FM	71	3.056	0.9739
Valid N (listwise)	71		

Table 4.7 shows that the supplier fleet management system, Supplier fleet management practice is one of the viable that are assumed to change operational performance. The tasks that the researcher used to determine the effects of operational performance were, four and the respondents gave higher mean score was 3.26 for well maintained vehicles are supplied by the supplier , and next higher mean score was 3.11for the request of the supplier has clear way of communicating fuel consumption to customers & the third higher mean score was for the question of the supplier has efficient way of controlling fuel consumption of vehicles as fuel cost is covered by the institute with the mean sore of 3.01. The last request mean score was 2.83 for the question of drivers of the supplier are well trained and professional. Accordingly, the analysis shows that fleet management had a means score of 3.056 which lays on neutral position which also shows there is a gap on the supplier fleet management system. Adrian Imbuga and Dr. Wario Guyo, (2018) study on the influence of fleet management outsourcing on service delivery confirms the it has a positive impact on operational efficiency. Hence applying controlling mechanism on the supplier fleet management system is required to enhance the operational performance of ILRI.

Table 4.8 Financial value

	N	Mean	Std. Deviation
Service is delivered by the supplier at reasonable price	71	3.1690	0.86166
price of the service is stable	71	2.9577	1.00622
The institute managed to reduce its Operation cost by Outsourcing its fleet management functions	71	3.2676	1.04140
The institute is managed to avoid unnecessary cost	71	3.2535	0.98152
FVALUE	71	3.1620	0.97270
Valid N (listwise)	71		

Table 4.8 demonstrate that financial value gained exists as one of the possible variables that are presuming to vary operational performance. The first question which the respondents gave higher mean score was the question supposed that, the institute managed to reduce its operation cost by outsourcing its fleet management functions which has the mean score of is 3.26, which lays in disagreed level; the second question is the institute is managed to avoid unnecessary cost with the mean score of 3.26 which also lays on disagree level. Service is delivered by the supplier at reasonable price has a mean score of 3.16 and Price of the service is stable which accounts 2.95 both lays in neutral level. Accordingly, the analysis shows that financial value had a means score of 3.16, which is the score of this variable fall between the two extremes at neutral level.

Table 4.9. Relationship quality with the Supplier

	N	Mean	Std. Deviation
Issues(difficulties) are handled professionally by the supplier	71	2.8732	1.05464
There is mutual understanding b/n the supplier and the institute	71	2.5493	0.98254
Conflicts are handled properly by the supplier	71	2.8873	0.80266
The supplier is trustworthy	71	2.8451	0.95091
The supplier has high commitment in providing the required service	71	3.2535	0.96686
RQULITY	71	2.8817	0.95152
Valid N (listwise)	71		

Table 4.9 shows that quality of relationship with the supplier presume to vary operational performance, most of the respondents were somewhat suggesting there is no problem regarding mutual understanding between the supplier and the institute. The first question which the respondents gave higher mean score (disagree level) was regarding the the supplier has high commitment in providing the required service which is 3.25 this indicates that the mean score lays in disagree level, conflicts are handled properly by the supplier which accounts 2.88, Issues(difficulties) are handled professionally by the supplier which accounts 2.87, the supplier is trustworthy has a mean score of 2.84 & there is mutual understanding b/n the supplier and the institute which is 2.54. And the average mean for quality of relationship with the supplier had a means score of 2.88. Accordingly, the analysis shows that quality of relationship with the supplier had a means score of 2.88, which almost the score of this variable fall in neutral level. Hence, the respondents are undecided of the quality of relationship with the supplier which need to be improved so that the staff will get a clear picture of the relationship quality. As a study of (Mohamad Noorman Masrek & et al ,2014) confirms that partnership quality is strong predictor of outsourcing success which consequently impacts operational performance of an organization. The supplier needs to improve the relationship quality with the institute.

Table 4.10 Operational Performance

	N	Mean	Std. Deviation
The institute is able to change fixed cost in to variable cost (able to pay for what is used)	71	2.9577	0.74521
The institute is able to be flexible in doing its business	71	3.1408	1.09930
The institute is able to improve its operating standard of service	71	3.6338	0.91401
The institute is able to avoid interruption of duty due to unavailability of service	71	3.2394	1.06187
The institute is able to do its task in expected time frame	71	3.0986	1.03032
The institute is able to shorten its internal processing of doing business	71	3.5211	0.99799
The institute is able to focus on its core competency	71	2.92	1.052
The institute is able to use its asset (human and Capital) for its primary business	71	3.3662	0.83220
OPERFO.	71	3.2342	0.96663
Valid N (listwise)	71		

Table 4.10 indicates operational performance which shows the mean range from 2.92 to 3.63 from neutral to disagree level with the total mean score of 3.23 which also lays on disagree level which is an indication of poor operational performance. The study by (Joseph Nyameboame & Abubaker Haddud,2017) confirms that outsourcing significantly enhances the performance of an organization, therefore ILRI needs a serious follow up on the outsourced functions of procedure of outsourcing fleet management functions, service quality, financial value, supplier fleet management system & relationship quality which are the determinant factor to enhance the operational performance of the institute.

4.4 CORRELATION ANALYSES

Apart from the descriptive analysis the correlation analysis is used to see if there is any association between each variable. The analysis shows procedures of outsourcing had significant association with service quality, supplier fleet management system, relationship quality and financial value. Accordingly,

Procedures of outsourcing had significant ($r = .0.724$, $p = 0.000$) and positive association with fleet management. The finding also shows that there is positive and significant association between procedures of outsourcing and financial value. The analysis in the table below further indicates that service quality positively and significantly ($r = .715$ $p < 0.000$) correlated with relationship quality.

Table 4.11 Correlation

		Correlations					
		MeanPRoO	MeanSFM	MMeanSQ	MeanFV	MeanRQ	MeanOPerf
MeanPRoO	Pearson Correlation	1	.724**	.885**	.784**	.768**	.928**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	71	71	71	71	71	71
MeanSFM	Pearson Correlation	.724**	1	.800**	.640**	.565**	.781**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	71	71	71	71	71	71
MMeanSQ	Pearson Correlation	.885**	.800**	1	.796**	.715**	.937**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	71	71	71	71	71	71
MeanFV	Pearson Correlation	.784**	.640**	.796**	1	.619**	.875**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	71	71	71	71	71	71
MeanRQ	Pearson Correlation	.768**	.565**	.715**	.619**	1	.765**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	71	71	71	71	71	71
MeanOPerf	Pearson Correlation	.928**	.781**	.937**	.875**	.765**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	71	71	71	71	71	71

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

4.5 REGRESSION ANALYSIS

Table 4.12

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.976 ^a	.953	.950	1.96068	.953	264.346	5	65	.000	1.146

a. Predictors: (Constant), MeanRQ, MeanSFM, MeanSC, MeanPRoO, MMeanSQ

b. Dependent Variable: MeanOPerf

4.4.2. RESULTS OF OLS ESTIMATION

This study intended to investigate the effect of outsourcing fleet management functions on operational performance of ILRI. Particularly, how Procedure of outsourcing, service quality, relationship quality, supplier fleet management system and financial value determine the operational performance of outsourcing in the institute. Furthermore, Ordinal logistic regression (Ologit) model were employed to estimate the operational performance. The results of the econometric model estimation revealed that all variables have positive relationship with operational performance. Moreover, procedures of outsourcing, service quality, relationship quality and financial value were found to contribute significantly and positively on operational performance. In contrast, fleet management is insignificant effect since ($p > 0.05$) which is ($0.101 > 0.05$). However, procedures of outsourcing ($0.000 < 0.000$), quality service which is ($0.000 < 0.05$), had a positive and significant effect on operational performance. Similarly, relationship quality ($0.045 < 0.05$), and financial value ($0.000 < 0.05$), had a positive and significant effect on operational performance respectively.

Service quality and financial value had a positive and significant effect ($p < 0.05$) on operational performance, the positive coefficient of service quality suggested that, as the service quality improve the operational performance of the institution also increases likewise, regarding financial value, the positive coefficient of financial value advocated that, when the institute well managed to gain financial value by outsourcing then the operational performance come to be healthy.

The other perspective was relationship quality, this variable shows positive and significant ($p < 0.05$) effect on operational performance; findings shows that, the positive coefficients of this variable suggested that when there is better relationship quality between the supplier and the institute the better will be the performance. Likewise, concerning procedures of outsourcing, this variable also shows that it has positive effect and significant ($p < 0.05$) effect on operational performance; findings shows that, coefficients of supplier fleet management system had a positive impact to improve the operational performance of the institute even though the impact is insignificant.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976 ^a	.953	.950	1.96068
a. Predictors: (Constant), MeanRQ, MeanSFM, MeanSC, MeanPRoO, MMeanSQ				

Table 4.13

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5081.053	5	1016.211	264.346	.000 ^b
	Residual	249.876	65	3.844		
	Total	5330.930	70			

a. Dependent Variable: Mean OPerf

b. Predictors: (Constant), MeanRQ, MeanSFM, MeanSC, MeanPRoO, MMeanSQ

Table 4.14

Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.454	.878		.517	.607
	MeanPRoO	.288	.064	.296	4.488	.000
	MeanSFM	.065	.039	.075	1.664	.101
	MMeanSQ	.301	.064	.334	4.729	.000
	MeanFV	.280	.047	.276	5.965	.000
	MeanRQ	.087	.043	.086	2.041	.045

a. Dependent Variable: MeanOPerf

Regression model: the equation was expressed as follows:

$$Y = \alpha + \beta_1 (X_1) + \beta_2 (X_2) + \beta_3 (X_3) + \beta_4 (X_4) + \beta_5(X_5) + e$$

Y – Organization Performance

α - Constant (coefficient of intercept)

X1 – Procedure of outsourcing

X2 – Supplier fleet management system

X3 – Service quality

X4 – Financial value

X5 – Relationship quality

e – Error term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, – Regression coefficient for five variables.

The above table gives the results for the regression coefficient for the multiple linear equation.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$) which by supplying the coefficients becomes:

$$Y = 0.454 + 0.288X_1 + 0.065X_2 + 0.301X_3 + 0.280X_4 + 0.087X_5$$

Where: Y=Organization performance

According to the regression equation established, holding all independent factors constant, then operational performance will be 0.454 units. From the regression equation holding all other independent variables constant, a unit increase in procedure of outsourcing will lead to a 0.288 improvement in operational performance; a unit change in service quality will lead to a 0.301% increase in operational performance; a unit increase in financial value will lead to a 0.280% increase in operational performance and a unit increase in relationship quality will lead to a

0.087% increase in operational performance. However, at 5% level of significance and 95% level of confidence, procedure of outsourcing, service quality, financial value, & relationship quality have a significance influence on the organizational performance with p-values of 0.000, 0.000, 0.000 and 0.045 respectively. The P-value associated with the coefficient for supplier fleet management is 0.101 an implication that though relationship quality has an influence on the operational performance, its effect is insignificant

4.4. 3 BUDGET ALLOCATION OF FIVE YEARS TREND OF ILRI

The budget allocation for the transport unit of five consecutive years trend in the below figure shows that it is decreasing every year. In the year of the outsourcing decision made the budget was overused with around 75,000 \$ and the following year it overused of 67,000 \$ and when we see the last year 2018 budget the unit was able to return around 10K\$. which shows 74.8 % budget reduction for the unit by outsourcing the fleet management functions.

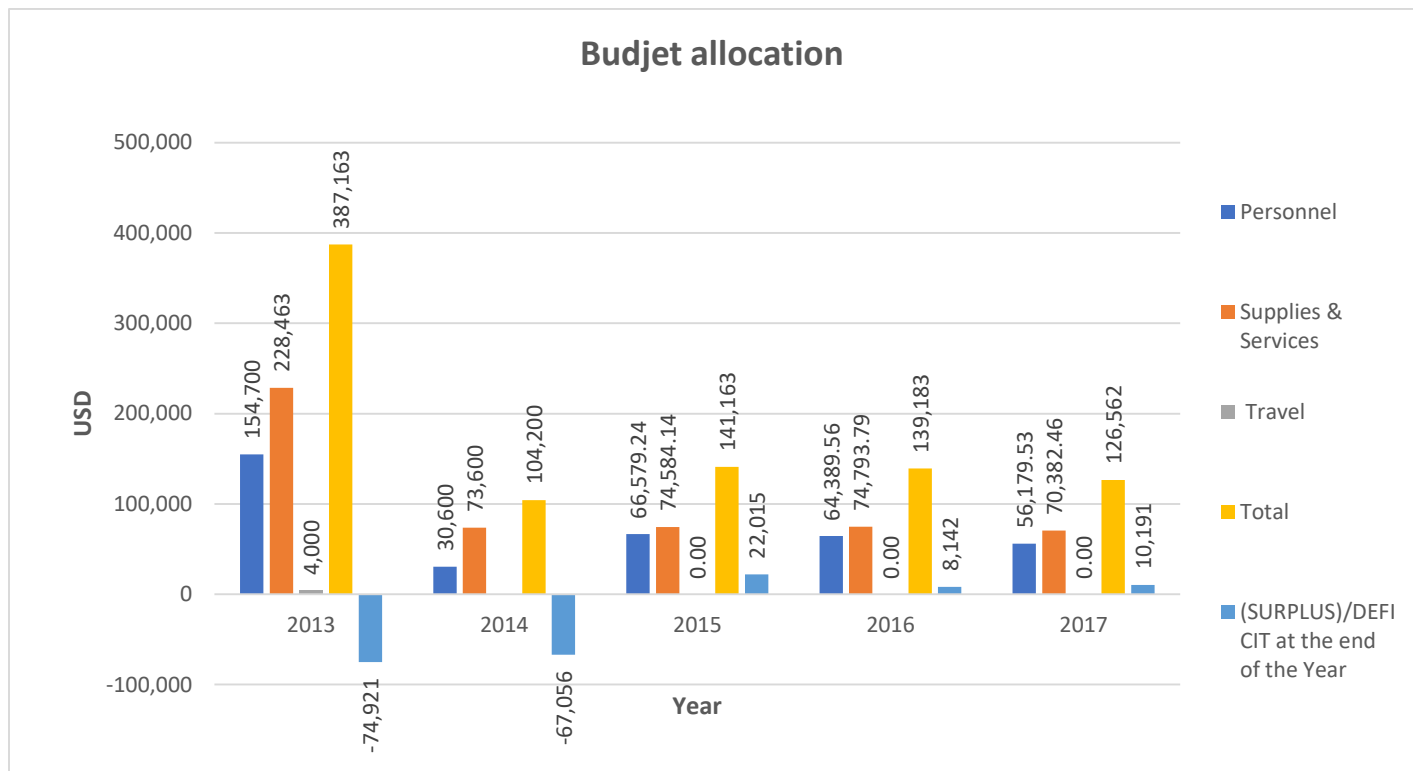


Figure 4.1 Budget allocation of five years

4.4.4 RESOURCE OF THE TRANSPORT UNIT BEFORE AND AFTER OUTSOURCING

Table 4.15 Transport unit resource before and after outsourcing

Year	2013	2017	% Decrease
Personnel	18	5	72%
Fleet size	67	10	85%

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

The final part of this research paper provides summary, conclusions and recommendations drawn from the findings of the data collected by questionnaire.

5.1 SUMMARY OF FINDINGS

ILRI needed an effective outsourced fleet management functions in order to enhance its operational performance and implement the institute mission properly.

This study intends to investigate this uncharted and overlooked area of ILRI. The research was anticipated to investigate the effect of outsourcing fleet management systems on operational performance of ILRI, Ethiopia. Five main variables were used to evaluate the impact on operational performance which includes; Procedure of outsourcing, Supplier fleet management system, service quality, financial value and relationship quality. In order to achieve these objectives, data were collected from the employees of the institute and processed in quantitative of descriptive approach and also used regression analysis.

Based on the analysis and interpretation of the data obtained from primary and secondary data sources, the researcher has come up with the following findings.

- Procedures of outsourcing and operational performance are significantly associated. The mean score of this variable is 2.89 (in neutral level) which indicates that there was a gap while following the procedure of outsourcing fleet management functions. While the operational performance of the institute is dependent on this variable and the result shows that a unit change on outsourcing procedure has 0.288 effect on operational performance of the institute keeping other variables constant.
- Service quality: descriptive analysis shows that the mean score of the service quality lays between 3.00 & 3.36 between neutral and disagree level. The implication was that the service provider in the institute was not offering quality services that could justify an improvement in operational performance. From the correlation analysis, service quality and operational performance had a significant positive relationship as shown by correlation coefficient of 0.937 and a p value of 0.000. Moreover, on the regression analysis the operational performance of the institute is dependent on this variable since it

has significant effect on the operational performance. A unit change in service quality has 0.301 effect on operational performance.

- Supplier fleet management system: result from respondent view indicates that the overall mean score is 3.05, which indicates the respondents are indifferent for the supplier fleet management system. Moreover, for the request of “well maintained vehicles are supplied by the supplier” the respondent showed their disagreement by the mean score of 3.26. However, from the regression analysis it shows that supplier fleet management is insignificant effect on the operational performance which contradicts the theories therefore it requires to undertake qualitative research in the future that can give the full picture of the result through observation. Since data was checked for correctness and it is confirmed all the data is correct.
- As for the effect of financial value on operational performance, the view from respondents was that this was also difficult for them to give a bold respond since the mean score is 3.162 which is neutral. However, their disagreement is clearly shown on reduction of operation cost and able to avoid unnecessary cost. This implied that the outsourced firm did not providing the service at lower cost. However, results from correlation analysis showed that there was a significant positive relationship between financial value and operational performance ($r=0.875$, $p=0.000$). A unit change in this variable has 0.280 effect on the operational performance keeping other variables constant. The secondary data also shows that there is a budget reduction of 67 %, personnel are reduced 72% and the fleet size also reduced 85%.
- Results from the respondent views indicated that relationship quality on a verge of neutral with a mean score of 2.881. This implied that service provider needs to work more on the relationship with the institute if there has to be an impact on operational performance. From the correlation analysis the results show that there was significant positive relationship between relationship quality and operational performance as the correlation coefficient was found to be 0.765 and p-value was 0.000.

Adjusted R² which is known as the coefficient of determination was used to explain how operational performance varied with procedure of outsourcing, supplier fleet management system service quality, financial value and quality of relationship. The model summary table shows that 95% of change in organizational performance can be explained by five predictors namely

Procedure of outsourcing, supplier fleet management system, service quality, financial value and quality of relationship. This is an implication that the remaining 5% of the variation in operational performance could be accounted for by other factors not considered in this study.

5.2 CONCLUSION

As per the regression equation established, holding all independent factors constant, then operational performance will be 0.454 units. From the regression equation holding all other independent variables a constant, a unit increase in procedure of outsourcing will lead to a 0.288 improvement in operational performance; a unit change in service quality will lead to a 0.301% increase in operational performance; a unit increase in financial value will lead to a 0.280% increase in operational performance and a unit increase in relationship quality will lead to a 0.087% increase in operational performance. However, at 5% level of significance and 95% level of confidence, procedure of outsourcing, service quality, financial value, & relationship quality have a significance influence on the organizational performance with p-values of 0.000, 0.000, 0.000 and 0.045 respectively. The P-value associated with the coefficient for supplier fleet management is 0.101 an implication that though relationship has an influence on the organizational performance, its effect is insignificant.

The results further infers that of all the predictors considered in this study service quality contributes the most to the operational performance followed by procedure of outsourcing & financial value as implicated by their larger coefficients.

5.3 RECOMMENDATIONS

Depending on the study findings, the study suggests the following ideas as all-encompassing recommendations to the problem.

Based on the objectives and conclusions this study recommended as follows:

- Based on the first objective on procedure of outsourcing, even though outsourcing procedure was not implemented properly, the institute need to identify the clear goal and needs of the outsourcing of fleet management functions required so that the corrective measure can be taken against the goals and the needs.
- Based on the second objective supplier fleet management system, well maintained vehicles need to be provided by the supplier, the supplier also needs to train its drivers, the fuel consumption of the vehicles need to be communicated to the institute since fuel is covered

by the institute. Therefore, discussing with the supplier is required to solve the above-mentioned problems.

- Based on the third objective on service quality, it turned out that it was very difficult to the respondent to measure quality since their response was neutral. It is therefore recommended that organization should engage the service provider on the quality standards which are expected before entering into the contract. Communicating the service provider and discussing the quality standards is also required.
- Based on the forth objective on financial value, the financial value gained by outsourcing the fleet management functions was not realized by the staff even though the secondary data showed significant cost reduction on the budget allocation for the transport unit. From the secondary data there were 72% and 85% reduction in personnel and fleet size respectively by outsourcing the fleet management functions. Therefore, improving the service quality may give value for money. Since the study finding also shows that financial value has a significant influence on operational performance.
- Based on the fifth objective relationship quality, even though the relationship quality with the supplier is not bad compared to the other variables still discussion with the supplier is required in order to improve and put it in acceptable range which can impact the operational performance.

Lastly the general recommendation was that organizations should outsource with a clear picture in mind as to why they want to outsource. When organizations outsource, they should have measurable indicators in form of Key Performance Indicators (KPI) for the service provider. These measurable indicators also need to be checked in timely manner so that the corrective action will be taken before it is too late.

5.4 SUGGESTED FUTURE RESEARCH

Outsourcing the fleet management functions may have other variables which can affect the operational performance of the institute therefore including other variables and performing the research will give a better result. This study is limited to Ethiopia and including all ILRI branches in all continent who outsourced the fleet management functions and doing the research will give the full picture of the effect of outsourcing the fleet management functions on the operational performance of the institute. Moreover, this research is more quantitative, and it will be a base for qualitative research which can be determined by observation to gather non-numerical data. Furthermore, one of the independent variables (supplier fleet management system) is not significant therefore further study need to be done to determine that the supplier fleet management system has no significant effect on the operational performance of the institute.

REFERENCES

- Adrian Imbuga and Dr. Wario Guy, 2018 “Influence of fleet management outsourcing on service delivery performance in Nairobi bottlers limited” *International Journal of Supply Chain Management* ISSN 2518-4709(Online) Vol.3, Issue 1 No.4, pp 46 - 59, 2018
- A.Parasuraman, V.A. Zeithaml, and L.L. Berry, “A conceptual model of service quality and its implications for future research,” *Journal of Marketing*, 49(4), pp. 41-50, 1985.
- A.Parasuraman, V.A. Zeithaml, and L.L. Berry, “SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality,” *Journal of Retailing*, 64(1), pp. 12-40, 1988.
- A publication of Lyceum College, (Pty) Ltd., 2008, *Fleet Management Outsourcing*
- AKKER, 2011 “What is difference between fleet management and vehicle tracking?” extracted on May 3, 2018 <http://logist.it/difference-between-fleet-management-and-vehicle-tracking/>
- Beaumont, N. and Sohal, A. (2004). “Outsourcing in Australia” *International Journal of Operations & Production Management* Vol. 24 No. 7. pp. 688–700
- Berhanu Anosse, 2016 “Facility Management outsourcing practices” Thesis paper he school of graduate studies of Addis Ababa University.
- Bhimrao Ghodeswar, Janardan Vaidyanathan, (2008) "Business process outsourcing: an approach to gain access to world-class capabilities", *Business Process Management Journal*, Vol. 14 Issue: 1, pp.23-38,
- B. Kim and K. Park, “Satisfying different customer groups for IS outsourcing: a Korean IS company experience,” *Asian Pacific Journal of Marketing and Logistics*, vol. 15(3), pp. 48-69, 2003
- Bove, L. L., & Johnson, L. W. (2001). Customer relationships with service personnel: do we measure closeness, quality or strength? *Journal of Business Research*, 54(3), 189–197.
- Barthélemy, J. (2003) “The seven deadly sins of outsourcing”, *Academy of Management Executive*, Vol. 17, No. 2, pp 87-100 Bekiaris, E & Nakanishi, Y.J, 2004, *Innovation and case studies Economic impacts of intelligent transportation system* Vol.8:60
- Bragg SM. *Outsourcing: a guide to selection the correct business unit*. New York: John Wiley and Sons; 200
- Broedner, P., Kinkel, S., and Gunter, L., 2009. Productivity effects of outsourcing: New evidence on the strategic importance of vertical integration decisions. *International Journal of operations and Product Management*, 29 (2), 127–150.
- Brown, D. and Wilson, S. (2005). “The Black Book of Outsourcing – How to Manage the Changes, Challenges, and Opportunities”, Wiley, Hoboken.
- Bryman, A. & Bell, E. 2007. *Business research methods* (2nd ed.). Oxford University Press, USA
- BUSINESSPLANS, 2018 <https://www.mycafeteriaplan.com/the-value-of-outsourcing/> Extracted on July 6, 2018
- Business dictionary extracted on August 11, 2018. <http://www.businessdictionary.com/definition/operational-performance.html> Fleet news

extracted on July 21,2018. <https://www.fleetnews.co.uk/fleet-management/driver-management/>

- Carlos Sanchís-Pedregosa, María del Mar González-Zamora, José A. D. Machuca “Identifying the Objectives of Outsourcing Logistics Services as a basis for Measuring its Financial and Operational Performance” International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering Vol:6, No:9, 2012
- Carroll Hern & Ronald J. Burke 2006 Enhancing the success of outsourcing initiatives Europe’s Journal of Psychology
- Chenlung Yang , John G. Wacker & Chwen Sheu (2012) What makes outsourcing effective? A transaction-cost economics analysis, International Journal of Production Research, 50:16, 4462-4476, DOI: 10.1080/00207543.2011.60034
- Clinton, H.R. (2004) “‘Bestshoring’ beats Outsourcing”, Opinionjournal.com
- Chris C. Ducker, August 2009, Business Growth and the Outsourcing Lifestyle <https://www.chrisducker.com/wp> Extracted on May 23,2018
- Christopher A. Horning ,2014 A balanced scorecard approach to Measure performance, SVP-Solution Engineering support service.
- Churchill, G.A. 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, Vol. 16: 64–73.
- Cook, T.D. & Campbell, D.T. 1979. *Quasi-experimentation: Design & analysis issues for field settings*. Chicago, IL: Rand McNally.
- Daniel Arias-Aranda, Oscar F. Bustinza & Vanesa Barrales-Molina (2011) Operations flexibility and outsourcing benefits: an empirical study in service firms, The Service Industries Journal, 31:11, 1849-1870,
- David, F. R. (2011): Strategic management: Concepts & cases. Prentice Hall, 13th edition. ISBN 01-361-2098-9.
- Davind Ramu, P. Eng,2008 “quality in outsourcing” publication on American society for quality (ASQ).
- "Defense Logistics Agency".www.dla.mil. Retrieved 5 August 2018.
- Deloitte Development LLC 2018, J. Joy, *Divestitures and Spin-Offs*, Management for Professionals
- Dian Schaftauser ,2005, Practical Advice for IT and business process outsourcing Magazine retrieved on April 2018 from <https://sourcingmag.com/what-is-outsourcing/>
- Dr. John Sullivan, 2004 “Metrics for Measuring Outsourcing Effectiveness”, IHRIM Journal
- Dolce, J.E. (1998). Analytical fleet maintenance management society of automotive engineers, Inc.warrendale USA
- Duening T. and Click R. (2005). “Essentials of Business Process Outsourcing”, John Wiley & Sons, Inc., Hoboken, New Jersey
- Edward Sweeney,2006, a post graduate paper on Outsourcing in Ireland: Dublin Institute of Technology.
- Eisenhardt, K.M. (1989). “Agency theory: an assessment and review”. *Academy of Management Review*, No. 14, Vol. 1, pp. 57–74.

- Emilie Filion, MBA September 29, 2016,” Understanding the Challenges of Outsourcing” Accessed on July 12,2018 <https://blog.cognibox.com/en/blog/challenges-of-outsourcing>
- "Field,A. (2009). Discovering statistics using SPSS. 3rd edition, sage publication Ltd.
- Fleet news 2018, retrieved on June 25,2018 <https://www.fleetnews.co.uk/fleet-management/driver-management/>
- Foss, N.J. (1998). The competence-based approach: Veblenian ideas in the contemporary theory of the firm. *Cambridge Journal of Economics*, 22(2), 479–496.
- Garcia, Mari Cruz; Sanz-Bobi, Miguel A.; Del Pico, Javier, August 2006
- Green W. H. (2000). *Econometric analysis* (4th ed.). New Jersey: Prentice-Hall Inc
- Grover, V. and Malhotra, M.K., 2003. Transaction cost framework in operations and supply chain management research: Theory and measurement. *Journal of Operations Management*, 21 (4), 457–473
- Gujarati, D.N. (2003). *Basic econometrics* (fourth edition). New York: Mcgraw-Hill/Irwin."
- Gulzhanat Tayauova,2012, Advantages and disadvantages of outsourcing, *Procedia - Social and Behavioral Sciences* 41 (2012) 188 – 195
- Handfield R. (2006). “A Brief History of Outsourcing” <http://scm.ncsu.edu/scm-articles/article/a-briefhistory-of-outsourcing> (accessed date June 15,2018).
- Handley, S.M. and Benton, W.C., 2009. Unlocking the business outsourcing process model. *Journal of Operations Management*, 27 (5), 344–361.
- Han, H.-S., Lee, J.-N., & Seo, Y.-W. (2008). Analyzing the impact of a firm’s capability on outsourcing success: a process perspective. *Information & Management*, 45(1), 31–42.
- Hatum, A., & Pettigrew, A.M. (2006). Determinants of organizational flexibility: A study in an emerging economy. *British Journal of Management*, 17(2), 115–137
- Hoffman, T. (2003) “Outsourcing Debate driven by cost, agility: IT managers find offshore outsourcing to be a compelling way to cut costs”, *ComputerWorld*
- Hohn, Geoffrey M. ,2011, “Tugboat”. University of Washington. 146 pages
- Holmstrom, J.B. and Aavikko, P. (1994). “Achieving a management breakthrough in inbound logistics by improving the efficacy of operational decisions”, *Production and Inventory Management Journal*, Vol. 35 No. 3, pp. 1-8.
- Jose Miquel Fernandez Gomes, 2015 a publication on Introduction to fleet Management, Advanced fleet Management consultancy, Spain
- Joseph Nyameboame, Abubaker Haddud, (2017) "Exploring the impact of outsourcing on organizational performance", *Journal of Global Operations and Strategic Sourcing*, Vol. 10 Issue: 3, pp.362-387, <https://doi.org/10.1108/JGOSS-01-2017-0001>
- Joyce. M. Alwanga ,2015” the effect of business process outsourcing on the performance of telecommunication firms in kenya” a research project, university of nairobi
- Kaplan, R. and Norton, D. (1992), “The Balanced Scorecard – measures that drive performance”, *Harvard Business Review*, Vol. 70 No. 1, pp. 71-9.

- KIAH Consulting ,2016 “Seven steps to successful sourcing” Retrieved on September 12,2018. https://kiah.com/wp-content/uploads/2017/10/wp002_successful-sourcing_082016.pdf
- Kirk, C. S. 1998. Operations Research in the Company Car Fleet: When Simple is Efficient. Transportation Science, pp 713-729.
- Kletzer, L. (2004) “The Upside of Outsourcing”, book Kiplinger’s Personal Finance
- Kroes, J.R. and Ghosh, S., 2010. Outsourcing congruence with competitive priorities: Impact on supply chain and firm performance. Journal of Operations Management, 28 (2), 124–143
- Kothari, C.R. 2005. *Research methodology methods and techniques* (2nd ed.). India: New Age
- Landis K.M., Mishra S., P. K. (2005): “Calling a change in the outsourcing market.” Deloitte Consulting report
- Lange, H.B., (et al.) ,1992. "Development of fuel oil management system software: Phase 1, Tank management module". Retrieved On 22 June 2018
- Lee, J.-N., & Kim, Y.-G. (1999). Effect of partnership quality on IS outsourcing success: conceptual framework and empirical validation. Journal of Management Information Systems, 15(4), 29– 61.
- Liao KG, Reategui LA. Information technology outsourcing in emerging markets. Massachusetts Institute of Technology; 2002.
- Lilian Kemunto Onsongo,2016, “The effects of marketing strategies on customer retention” thesis paper, School of business, university of Nairobi.
- Margaret Rouse,2017 retrieved on June 20,18
<https://whatis.techtarget.com/definition/fleet-management/>
- Md. Sarifuzzaman,2012, “Impact of Outsourcing on Company Performance”, Institute of governance Studies Brac University, Dhaka
- Mohammed Abdur Razzaque, Chang Chen Sheng, (1998) "Outsourcing of logistics functions: a literature survey", International Journal of Physical Distribution & Logistics Management, Vol. 28 Issue: 2, pp.89-107, <https://doi.org/10.1108/09600039810221667/>
- Mohamad Noorman Masrek, Mohd Zhahir Yaacob, Mohd Ridwan Seman, & Azman Ibrahim, 2014“The Contribution of Service Quality and Partnership Quality on IT Outsourcing Success” Journal of Emerging Trends in Computing and Information Sciences, Vol. 5, No. 10 October 2014.
- Mugenda, O. M. Mugenda, A. G. (2003), “Research Methods, Quantitative and Qualitative Approaches”. Nairobi: Africa Centre for Technology Studie
- Murry.j(2013).”Likert data”international journal of business and social science4(11),258—264
- Nachmias, C.F. & Nachmias, D. 2008. “*Research methods in the social sciences*” (7th ed.). New York: Worth.
- Naude, P., & Buttle, F. (2000). “Assessing relationship quality”. Industrial Marketing Management, 29, 351–361.

- Neely, A., Gregory, M., and Platts, K., 1995. Performance measurement system design - A literature review and research agenda. *International Journal of Operations and Production Management*, 15(4), 80-116.
- Nick Jones, October 19th, 2017 "Fleet management Outsourcing" <http://evpsolutions.co.uk/fleet-management-outsourcing> (retrieved on June 15, 2018)
- Oates, B.J. 2006. *Researching information systems and computing*. SAGE Publications London
- Panzar, J. C. & R. D. Willig (1977): "Economies of scale in multi-output production." *The Quarterly Journal of Economics* pp. 481–493.
- Patricia, November 8, 2017 Retrieved on June 18 <https://smartchurchmanagement.com/advantages-and-disadvantages-of-outsourcing/>
- Ramlah Hussein, Husnayati Hussin, Zuraini Ismail & Norshidah Mohamed, 2007, "Perceived Service Quality, Relationship Quality, and IT Outsourcing Success in Malaysian Organizations" IRMA International Conference
- Richardson, N. 2011, Fleet Maintenance and Resale Value. *Operational Research Quarterly* Vol 29, pp 144-201.
- Sanjay Chaudhary & Rajiv Kishore, 2010, Determinants and Impacts of Governance Forms, *JITCAR, Volume 12, Number 1, 2010*
- Satyendra, 2016 "outsourcing – a management technique" on ISPATGURU Retrieved, June 13, 2016 <http://ispatguru.com/outsourcing-a-management-technique/>.
- Sarkisian, N. Topics in Multivariate Statistics: Ordered Logit (2004).
- Saunders, M., Lewis, P. & Thornhill, A. 2003. *Research methods for business students* (3rd ed.). Harlow, UK: Prentice Hall.
- Saxena, K. B., and Bharadwaj, S. S. (2009). Managing business processes through outsourcing: a strategic partnering perspective. *Business Process Management Journal*, 15(5), 687-715.
- Sekaran, U. and Bougie, R. (2013) *Research Methods for Business: A Skill-Building Approach*. 6th Edition, Wiley, New York.
- Selamawit Shitaye, 2016 A research project on Outsourcing in Commercial Bank of Ethiopia, St. Mary's University
- Smith, M. A., Mitra, S., & Narasimhan, S. (1998). Information systems outsourcing: a study of pre-event firm characteristics. *Journal of Management Information Systems*, 15(2), 61–93.
- Solomon Mezgebu 2016, "Assessment of outsourcing practice of banks in Ethiopia" Master's Thesis paper of Addis Ababa University College of Business and Economics
- Subrata Chakrabarty, Dwayne Whitten & Ken Green (2008) Understanding Service Quality and Relationship Quality in is Outsourcing, *Journal of Computer Information Systems*
- Sudawan Somjai, July 2017 Advantages and disadvantages of Outsourcing the Business and Management Review, Volume 9 Number 1

- Sum, C-C., Teo C-B. and Kwan-Kee, N. (2001). “Strategic logistics management in Singapore”. *International Journal of Operations & Production Management*, No. 21, Vol. 9, pp. 1239-1260.
- Tate, W. L., and Ellram , L. M. (2009). Offshore outsourcing: a managerial framework.
- Team twago April 2010, 8 reasons for outsourcing retrieved from <https://www.twago.com/blog/8-reasons-for-outsourcing/>
- Tewodros Demissei May 2015, the impact of outsourcing transport service on Logistic performance
- Trochim, W. 1999. *The research methods knowledge base* (2nd ed.). Ithaca, NY: Cornell.
- Cook, T.D. & Campbell, D.T. 1979. *Quasi-experimentation: Design & analysis issues for field settings*. Chicago, IL: Rand McNally.
- Van Hoek, R.I, 2000. The purchasing and control of supplementary third-party logistics services. *The Journal of Supply Chain Management*, 36 (4), 14–26.
- Vivek Gupta & Sushil, November 2014 *Journal of Information Technology Management* ISSN #1042-1319
- Vivek, S., Banwet, D.K., and Shankar, R., 2008. Analysis of interactions among core, transaction and relationship-specific investments: The case of off shoring. *Journal of Operations Management*, 26 (2), 180–197.
- Vladimír Střiteský, 2016/17 “Outsourcing: Benefits and Costs for Businesses” thesis Charles University
- Weimer, G., 2009. *Service Reporting im Outsourcing-Controlling*. Wiesbaden: Gabler.
- Williamson, O.E., 2008. Outsourcing: Transaction cost economics and supply chain management. *Journal of Supply Chain Management*, 44 (2), 5–16.
- Williams, R. Ordered Logit Models - Overview (2015).
- Youxu Tjader, Jerrold H. May, Jennifer Shang, n, Luis G. Vargas & Ning Gao, 2013, *Int. J. Production Economics* 147 (2014) 614–623

APPENDIX I: RESEARCH QUESTIONNAIRE

Research Questionnaire
Addis Ababa University
Faculty of business and economics
School of Commerce
Department of Logistics and Supply Chain Management

My name is Welansa Belayneh. I am a Post graduate student of LSCM (Logistic and Supply Chain Management) of Addis Ababa University faculty of business and economics. ILRI outsourced the transport services five years ago therefore; this questionnaire tries to assess the effects of outsourcing the fleet management functions on the operational performance of ILRI. Therefore, I kindly request you to devote a few minutes and answer this questioner. Your cooperation will be highly appreciated, information you are going to provide will be very helpful to the accomplishment of the study. Hence, you are kindly requested to be honest in responding the questions provided in the questioner. Your response to the questions will be kept confidential and only used for the academic purpose.

Instruction: - Please provide the necessary responses in the appropriate box (put “Tick” (✓) mark).

Part I. Demographic characteristics of the respondent

1. **Gender:** Male ☐ Female ☐

2. **Educational level:**

College Diploma ☐ Degree ☐ Masters ☐ PHD ☐

Others please specify -----

3. **Your current position in the organization:**

Manager ☐ Supervisor ☐ ILRI Admin staff ☐ ILRI Technical ☐

Others please specify-----

4. **Work Experience in the institute:**

6-10 Years ☐ 11-15 Years ☐ More than 15 Years ☐

Part II: Information related to the history and practices of outsourcing in ILRI

Instruction: - Please provide the necessary responses in the appropriate box (put “Tick” (✓) mark).

No .	Items	Measures				
		Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
1	My organization outsourced its fleet management functions to reduce operating costs					
2	My organization outsourced its fleet management functions to improve quality					
3	My organization outsourced its fleet management functions to concentrate on the institutions core business					
4	My organization outsourced its fleet management functions to have access to the latest technologies					
5	There were clear goals and needs identified which showed outsourcing was appropriate for the institute					
6	Cost benefit analysis has been made before outsourcing decision.					
7	There was clear understanding of all the options available before the outsourcing decision.					
8	There were top management supports for the outsourcing decision and procedure					
9	The outsourcing decision was clearly communicated to staff.					
10	After the outsourcing decision, service is available whenever it is required					
11	Service is delivered by the supplier as per agreed standards					
12	Service is delivered by the supplier in reasonable time frame					
13	The supplier is flexible in delivering staff demands					
14	Well maintained vehicles are supplied by the supplier					
15	Drivers of the supplier are well trained and professional					
16	The supplier has efficient way of controlling fuel consumption of vehicles as fuel cost is covered by the institute as per usage					
17	The supplier has clear way of communicating fuel consumption to customers					
18	Service is delivered by the supplier at reasonable price					

19	Price of the service is stable					
20	The institute managed to reduce its operation cost by outsourcing the fleet management functions					
21	The institute managed to avoid unnecessary cost					
22	Issues(difficulties) are handled professionally by the supplier					
23	There is mutual understanding b/n the supplier and the institute					
24	Conflicts are handled properly by the supplier					
25	The supplier is trustworthy					
26	The supplier has high commitment in providing the required service					

Other challenges specify and rate it

Part III Actual measure of Operational performance after outsourcing

Instruction: - Please provide the necessary responses in the appropriate box (put “Tick” (✓) mark). 1. Very High 2. High 3. Neutral 4. Low 5. Very low

No .	Items	Actual Measures				
		VH (1)	H (2)	N (3)	L (4)	VL (5)
27	The institute is able to change fixed cost in to variable cost (able to pay for what is used)					
28	The institute is able to be flexible in doing its business					
29	The institute is able to improve its operating standard of service					
30	The institute is able to avoid interruption of duty due to unavailability of service					
31	The institute is able to do its task in expected time frame					
32	The institute is able to shorten its internal processing of doing business					
33	The institute is able to concentrate on its core business					
34	The institute is able to use its asset (human and capital for is primary business					

APPENDIX II: PRELIMINARY TESTS

A. Test of Multicollinearity

A VIF test was used to test the existence of multicollinearity problem. The results of the test indicate the highest VIF is 6.909 with $R^2 = 0.953$; which indicate the model performed with no major multicollinearity problem among the explanatory variables.

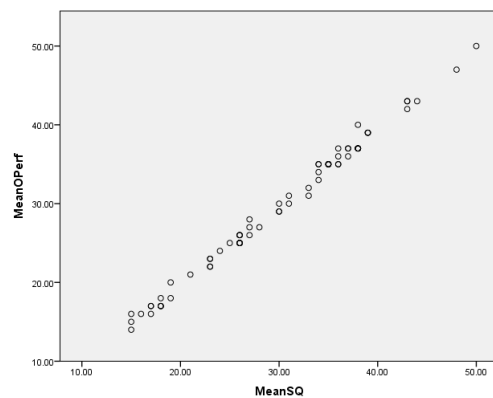
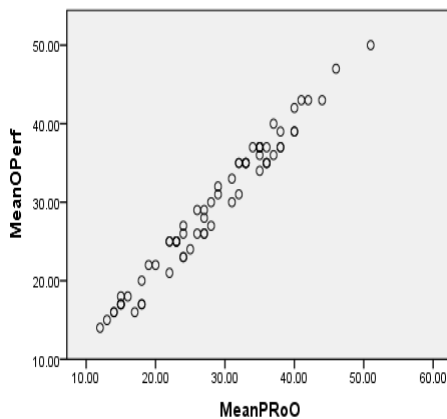
Table 16. multicollinearity test

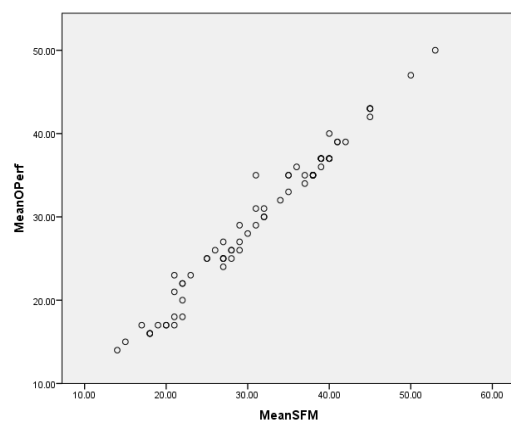
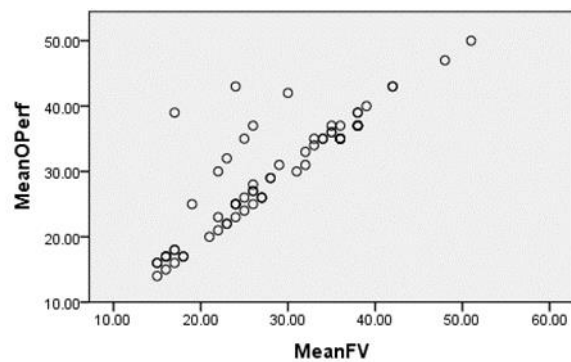
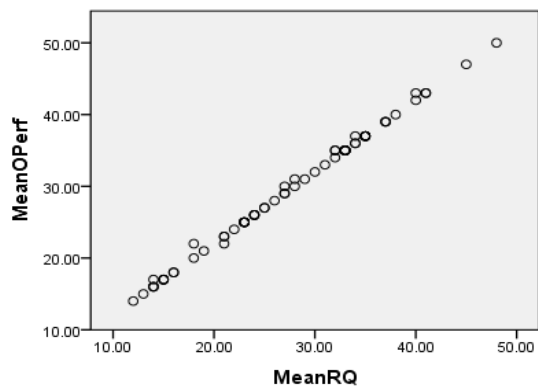
Variable	VIF
Procedures of outsourcing	6.022
Quality service	2.796
Relationship quality	6.909
Financial Value	2.968
Fleet management	1.362
Mean VIF	2.480

Source: Own survey, 2018

B. Test of Heteroscedasticity

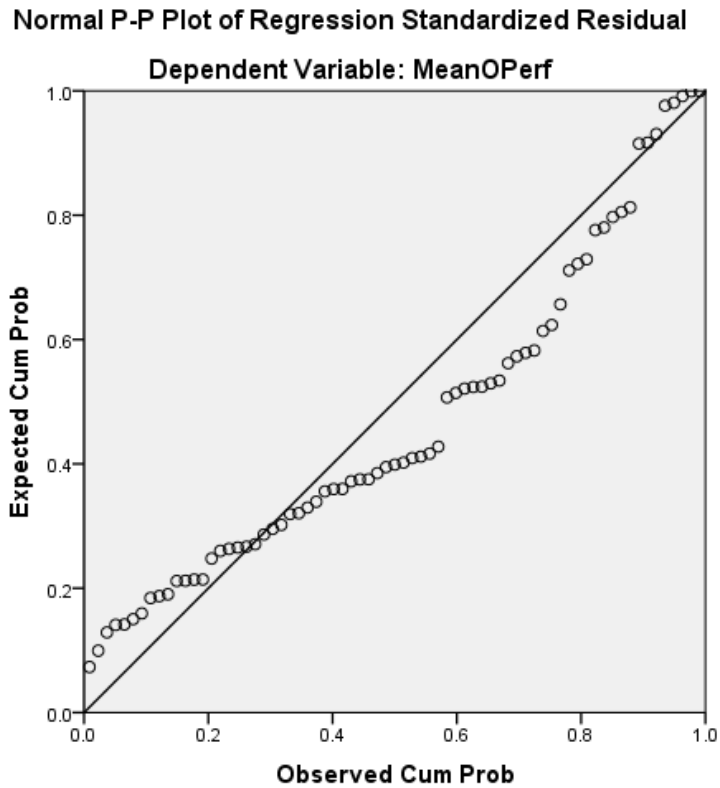
One of the important assumptions of the classical linear regression model is that the variance of each disturbance term ui , conditional on the chosen values of the explanatory variables, is some constant number equal to σ^2 (Gujarati 2003). Although there are different ways and techniques to check the existences of heteroscedasticity, for the purpose of this research we use scatter plots test





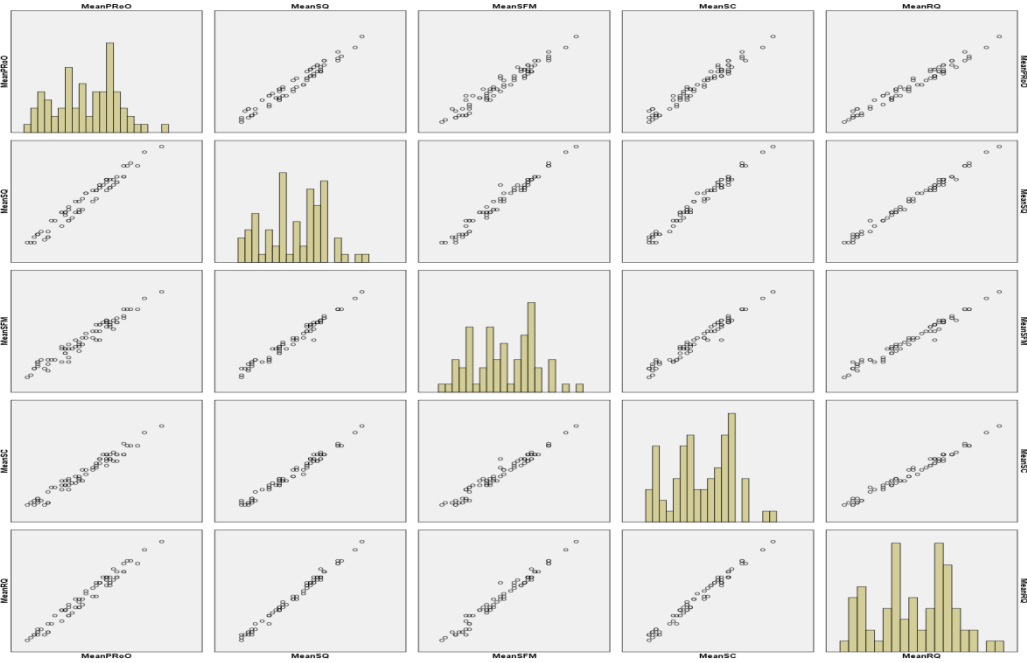
Test of Normality

In order to run ordinary least square method the error term or residuals must be normally distributed; therefore, p-plot technique was employed; and as shown in the figure below the residuals are nearly normally distributed.



C. Linearity assumption

The assumption of linearity articulates the dependent and each independent variable should have a linear relationship. Therefore, scatter plot technique was employed to test the linearity assumption as shown in the graph below the assumptions are achieved the linearity assumption.



APPENDIX III: PROFILE OF THE RESPONDENTS

Variable		Frequency	Percentage
Gender	Male	45	63.4 %
	Female	26	36.6 %
Educational Level	Collage Diploma	10	14.08 %
	Degree	21	29.57 %
	Masters	32	45.07 %
	PHD	3	4.22 %
	Others (Certificate)	5	7.04 %
Unit	Manager	11	15.49 %
	Supervisor	17	23.94 %
	Admin staff	25	35.21 %
	Technical	6	8.45 %
	Others	12	16.90 %
Work experience	6 -10 Years	28	39.43 %
	11-15 Years	26	36.61 %
	More than 15 Years	17	23.94 %