

**IMPACT OF MATERIAL HANDLING SYSTEMS ON SUPPLIERS EFFICIENCY
IN HEAVY COMMERCIAL TRANSPORT; A CASE STUDY OF
SDV TRANSAMI, NTINDA NAKAWA DIVISION**

BY

BIRIKE IMMACULATE

BSP / 12718 /61/DU

A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS AND MANAGEMENT
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A
BACHELOR'S DEGREE IN SUPPLIES AND PROCUREMENT MANAGEMENT
Of KAMPALA INTERNATIONAL UNIVERSITY

SEPTEMBER, 2010

DECLARATION

I, the undersigned declare that this Research Report "*The Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport*" is my own original work and has never been presented to any other institution of higher learning for any academic award.

Signature:

.....

BIRIKE IMMACULATE

BSP / 12718 /61/DU

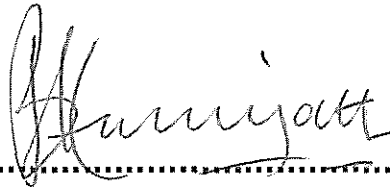
Date:

.....

APPROVAL

This is to acknowledge that, this Research proposal "*The Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport*" A Case Study of SDV Transami in Ntinda Nakawa Division has been prepared and submitted to the School of Business and Management under my supervision and approval.

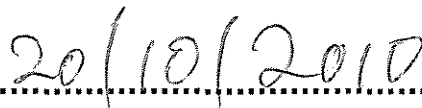
Signature:



DR. KINYATTA STANLEY

(SUPERVISOR)

Date:



DEDICATION

I dedicate this piece of work to the Almighty God and to my family, most especially my Loving Dad Mr. Kanyana Gastafas, my Mum Mrs Brandina Kanyana, my loving husband Mr. Emudong Max, My Colleagues Nangonzi Stella, Susan Kyeyune, Nakiwu Esther and to my brothers Wiswa Emmanuel, Lagonyi Robert, Wasalaine Jolam and to My sister , Baluka Zerida and Ruth among others who played a very fundamental role in shaping and guiding me from and throughout my academic endeavors.

ACKNOWLEDGEMENTS

I wish to thank the Almighty God for giving me the strength, grace, opportunity and mercy in accomplishing this work. All that we know is a sum total of what we have learned from all who have taught us, either directly or indirectly.

I am forever gratified to the countless outstanding men and women who by their commitment and dedication to becoming the best they could be, have inspired me to do the same. I also wish to sincerely thank my Research Supervisor Dr. Stanley Kinyatta, who contributed a lot to the outcome of this Project report.

My sincere thanks go to the entire Staff of Institute of open and Distance learning especially Department of distance for the hand of cooperation they extended to me in the process of conducting this study.

Finally, I thank all those who contributed to the outcome of this piece of work whose names would not appear here because of space and am appreciative to you all and may the Almighty God bless you.

TABLE OF CONTENT	PAGE
DECLARATION	I
APPROVAL.....	II
DEDICATION	III
ACKNOWLEDGEMENTS.....	IV
TABLE OF CONTENT.....	V
LIST OF TABLES	IX
ABSTRACT.....	X
ACRONYMS	XI
CHAPTER ONE	1
INTRODUCTION	1
1.0 Introduction	1
1.1.1 Historical Background.....	1
1.1.2 Theoretical Background.....	2
1.1.3 Conceptual Background.....	2
1.1.4 Contextual Background	3
1.2 Statement of the Problem.....	3
1.3 Purpose of the study	4
1.4 Research Objectives.....	4
1.5 Research Questions	4
1.6 Scope of the Study.....	4
1.7 Significance of the Study	5
1.8 Definition of Key Operational Terms.....	5

3.5.2 Primary data	29
3.6 Research Instruments	30
3.6.1 Interviews;	30
3.6.2 Questionnaires;	30
3.6.3 Document Analysis	31
3.7 Research Procedures.....	31
3.8 Validity and Reliability	31
3.10 Ethical Consideration	32
3.11 Limitations of the Study	32
CHAPTER FOUR	33
DATA INTERPRETATION, PRESENTATION AND ANALYSIS.....	33
4.0 Introduction.....	33
4.1 Materials handling and storage methods at SDV Transami Ntinda Nakawa Division	33
4.2 Important safety measures of SDV Transami, Ntinda Nakawa Division.....	40
4.3. Good suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division	45
4.4. Interview Interpretation and Analysis.....	51
CHAPTER FIVE	56
DISCUSSION, SUMMARY CONCLUSION AND RECOMMENDATIONS.....	56
5.0 Introduction	56
5.1 Discussion	56

5.1.1	Materials handling and storage methods at SDV Transami Ntinda Nakawa Division	56
5.1.3	Effective Practices to Manage material Handling and suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division	57
5.1.4	Benefits of good material handling Practices	58
5.2	Conclusion.....	61
5.3	Recommendations	63

REFERENCES.....	66
------------------------	-----------

Research Instruments	68
-----------------------------------	-----------

APPENDIX I: Questionnaires.....	68
---------------------------------	----

APPENDIX II: Structured interview guide.....	71
--	----

APPENDIX III: The Time Frame of the Study	72
---	----

APPENDIX IV: The Budget for the Study.	73
---	----

APPENDIX V: Sketch map of Uganda showing the location of Ntinda (study Area)	74
---	----

LIST OF TABLES

Table 1 Sample Size.....	29
Table 4.1.1: Responses on moving, handling, and storing materials?	33
Table 4.1.2: Responses on potential hazards for workers.....	34
Table 4.1.3: Responses on moving materials manually.....	36
Table 4.1.4: Responses on moving materials mechanically.....	38
Table 4.1.5: Responses on Storage hazards.....	39
Table 4.2.1: Responses on employees safety measures	40
Table 4.2.2: Responses regarding cranes.....	40
Table 4.2.3: Responses on safe use of slings and other sharp equipments.....	41
Table 4.2.4: Responses on organization’s visibility to supply sources.....	41
Table 4.2.5: Responses on operate powered industrial trucks?.....	42
Table 4.2.6 Responses on safety requirements for design.....	43
Table 4.2.7 Responses on maintaining powered industrial trucks.....	44
Table 4.3.1: Responses on improved product quality?.....	45
Table 4.3.2: Responses on minimizing stock outs	46
Table 4.3.3: Responses on increased reputation?.....	47
Table 4.3.4: Responses on organization’s share price amongst stakeholders?.....	49
Table 4.3.5: Whether managing material risks can minimize delays in delivery.....	49
Table 4.4.1: Whether managing material handling practices improve product quality.....	51
Table 4.4.2: Responses on tactic to material handling and logistic management?.....	52
Table 4.4.3: Whether handling practices is associated with increases reputation.....	52
Table 4.5.4: Responses on handling risks management	53
Table 4.5.5: Responses on material handling practices	54

ABSTRACT

Purpose; the Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport at SDV Transami to establish the Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport at SDV Transami.

The study was guided by the following objectives:- To examine the materials handling and storage methods at SDV Transami Ntinda Nakawa Division;

To establish the important safety measures of SDV Transami, Ntinda Nakawa Division;

To identify the strategies on how to improve on suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division.

The research was principally descriptive involving both qualitative and quantitative techniques of data analysis. Simple random sampling techniques was the main techniques used to select respondents for the study, however some respondents were purposively selected and a total of 30 respondents participated in this study.

The main instruments for data collection were basically questionnaires and face to face interviews. Data collected using questionnaires and a structured interview guide was analyzed using frequency counts in form of percentages and was later tabulated to match with the variables. The findings of the research showed that the SDV Transami Management has inadequate and comprehensive handling strategy to monitor and control the flow of supplies to and out of the organization.

The researcher recommends that, senior management embed handling management practices into all mission-critical points along the supply chain; Need to establish an effective monitoring and evaluation ; Keep pace with the dynamic changes taking place within the business environment; Develop an effective quality strategy built on the strengths and core competencies; Consider an effective supply management policy; Make it imperative for executives and risk managers to reassess how they manage the growing number of risks facing their organizations, especially those affecting supply chains; Establish an effective monitoring and evaluation ; Emphasize the importance of consistent political commitment and support from the highest levels of government; Keep pace with the dynamic changes taking place within the business environment; risk managers in cooperation with senior management must embed risk management practices into all mission-critical points along the supply chain.

ACRONYMS

ERP	Enterprise Resource Planning
GSCF	Global Supply Chain Forum
ICB	International Competitive Bidding
MPSP	Master Production Schedule Planning
MRO	Maintenance, Repair and operating suppliers
MHE	Material handling equipment

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter focuses on the background of the study, Problem Statement, Purpose, research objectives, Research Questions, Scope, Hypothesis and Significance of the Study, validity, ethical consideration and limitations of the study.

1.1.1 Historical Background

In many instance, Firms struggle for efficiency and effectiveness. Strategies involving collaboration between actors and integration of activity chains are reliant of factors that firms do not have direct ownership and control over. This has implications for strategizing, setting the goals and measuring performance. Efficiency and effectiveness are often used to describe performance.

Ericson, Mona (2004)

From resource dependence perspective efficiency is defined as an internal standard of performance and effectiveness as an external standard of fit to various demands (Pfeffer and Salancik 1978). In supply chains efficiency improvements are for example Just-in-Time production while effectiveness is achieved through customer orientation and innovation. Ericson, Mona (2004)

Product design, and Process Planning should be done, if possible, before the layout of the factory and the Material Handling system is planned. For mixed product systems, where multiple products need to SDV Transami through the same processing line, the line should be designed to minimize the total amount of loop-back movement of materials. Similarly, in assembly lines, the sequence in which the parts arrive at the assembly station should match the sequence in which they are assembled. One example where this becomes very important is palletizing stations where pallets are being loaded with a particular part/product mix Ericson, Mona (2004)

1.1.2 Theoretical Background

This research is based on the (Pfeffer and Salancik 2003) resource dependency theory's independence between efficiency and effectiveness seems to relate to the unit of analysis; the organization, and that the evaluation of the organization is done in a static situation. If activities are used as unit of analysis instead the distinction gets messy. The characteristics for a supply chain starts at the producing/using exchange system using resources (production facilities) that is not solely owned by one organization. This means that claimed independence of efficiency and effectiveness is false in a supply chain as the organization also is part of a quasi-organizational effects of the chain as well as effects of the network (Hertz 2005).

The conceptualization of efficiency and effectiveness has its roots in system theory. Definition of the system is difficult for a quasi-organization as a supply chain that has blurred structural boundaries. Defining the system as processes of activities implies that the meaning of and the relation between efficiency and effectiveness might change as well. (Ericson et al., 2004)

Material handling means providing the right amount of the right material at the right place at the right time in the right position in the right sequence for the right cost (Hopp & Spearman, p289)

1.1.3 Conceptual Background

The dependent variable in this study is Material Handling refers to activities, equipment, and procedures related to the moving, storing, protecting and controlling of materials in a system. One of the basic components of any manufacturing system is its Material Handling Systems. Ericson, Mona (2004)

The dependent variable in this case is Suppliers' Efficiency is seen as a "value free" quantifiable measure highly valued as a rationale for activities such as improvement programs or as a base for rewards. This is problematic for social systems (Pfeffer and Salancik 1978) as efficiency is two dimensional (input and output) and social systems usually have several dimensions in their output. An example of this is the

interdependencies within as well as among supply chains that cause efficiency in one supply chain and inefficiency in overlapping supply chains (Dubois et al. 2003).

Exchange value and use value are outcome of activity systems. The supply chain is a producing/using activity system embedded in a networking activity system in Håkansson and Prenkert (2004) characterization of exchange systems. This means that the production facilities are the resources that are activated throughout at least three actors. Activities in a supply-chain are sequentially interdependent but have also pooled and reciprocal interdependencies (Håkansson and Persson 2004). The serial interdependent activities are managed through integration of processes and adaptation of activities. The pooled interdependencies are managed through a standardization and specialization and the reciprocal interdependencies are managed through responsiveness and a capability to innovate.

1.1.4 Contextual Background

The study will be conducted in Ntinda at SDV Transami, Nakawa Division where impacts of material Handling systems on suppliers efficiency in Heavy Commercial Transport.

1.2 Statement of the Problem

Efficient food processing relies on mixers, pumps, and dosing devices which run non-stop without failure. Food equipment manufacturers purposely design the equipment to handle a range of material mixtures to accommodate the multiple formulations that processors may assign to a single line. What is sometimes overlooked is how the viscosity may vary, depending on the shearing action imparted to the material in process. (Harland *et al.* 1999) Goals for an organization have thus to be set in relation to its network's needs. Whether the material being handled is mail in a postal system, money in a banking system, units of product in a production system among other, material handling is still a big problem (Tompkins et al., 1996). Strategies involving collaboration between actors and integration of activity chains are reliant of factors that firms do not have direct ownership and control over. It's

upon this background that the researcher took kin interest to investigate the impacts of material handling systems on suppliers' efficiency. (Harland *et al.* 1999)

House brands; It is interesting that most suppliers (76%) do not feel threatened by the house brands that retailers have developed, or the brands that retailers import themselves. Long distance trading; There was a time, we've been told, when distributors knew most of their retail clients, their spouses and their children, because they regularly visited them. Copies and counterfeits; It is cause for concern that 68% of the respondents report that their products has been copied by unknown manufacturers. Import problems; Suppliers across the board report problems with custom (78%) and shipping delays (76%) when importing stock.

1.3 Purpose of the Study

This study is to establish the Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport at SDV Transami.

1.4 Research Objectives

- (i) To examine the materials handling and storage methods at SDV Transami Ntinda Nakawa Division
- (ii) To establish the important safety measures of SDV Transami, Ntinda Nakawa Division.
- (iii) To identify the strategies on how to improve on suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division

1.5 Research Questions

- (i) What are the materials handling and storage methods at SDV Transami?
- (ii) What are the important safety measures of SDV Transami.?
- (iii) What are the strategies of supplier's effectiveness and efficiency at SDV Transami?

1.6 Scope of the Study.

This study will be conducted at SDV Transami in Ntinda, Nakawa Division. Contextually, the study covers the offloading, loading, storage and transportation.

The respondents for the study will cover Kampala SDV Transami Finance Department, Handling and suppliers department, Clearing and forwarding section as well as Transportation Department.

1.7 Significance of the study

To the researcher the study is a partial fulfillment of the requirements for the Award of a Bachelor's Degree in Supplies and Procurements at the school of Business and Management of Kampala International University.

The study will help the business enterprises to realize the impact of Material Handling System, in line with Loading, Offloading, Transportation, timeliness, transparency and productivity among others on suppliers' efficiency.

The out comes will assist future scholars /academic researcher in the supplies and material handling, among other business related fields to appreciate the uncontrollable environment in order to seek positive views which can help practioners to alleviate the challenges involved like resolving the recovery and recession of business environments.

The findings also aim at compelling the management of SDV Transami to devise effective operational plans on what should be done so as to minimize the adverse effects of financial performance among the business enterprise.

1.8 Definition of Key Operational Terms

Bulk material handling equipment is used to move and store bulk materials such as ore, liquids, and cereals. Bulk material handling equipment is used to move and store bulk materials such as ore, liquids, and cereals.

Cash-Flow: Arranging the payment terms and methodologies for exchanging funds across entities within the supply chain.

Information: Integration of processes through the supply chain to share valuable information, including demand signals, forecasts, inventory, transportation, potential collaboration

Distribution Network Configuration: number, location and network missions of suppliers, production facilities, distribution centers, warehouses, cross-docks and customers.

Inventory Management: Quantity and location of inventory, including raw materials, work-in-progress (WIP) and finished goods

Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging also refers to the *process* of design, evaluation, and production of packages. Packaging can be described as a *coordinated system* of preparing goods for transport, warehousing, logistics, sale, and end use.

Shipping container is a container with strength suitable to withstand shipment, storage, and handling. Shipping containers range from large reusable steel boxes used for intermodal shipments to the ubiquitous corrugated boxes

Material Handling is the movement, storage, control and protection of materials, goods and products throughout the process of manufacturing, distribution, consumption and disposal. The focus is on the methods, mechanical equipment, systems and related controls used to achieve these functions.

Material handling equipment is all equipment that relates to the movement, storage, control and protection of materials, goods and products throughout the process of manufacturing, distribution, consumption and disposal. Material handling equipment is the mechanical equipment involved in the complete system

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will introduce and focus on the theoretical review, conceptual framework and review of related literature.

2.1 Materials handling and storage methods

Handling and storing materials involve diverse operations such as hoisting tons of steel with a crane; driving a truck loaded with concrete blocks; carrying bags or materials manually; and stacking palletized bricks or other materials such as drums, barrels, kegs, and lumber. The efficient handling and storing of materials are vital to industry. In addition to raw materials, these operations provide a continuous flow of parts and assemblies through the workplace and ensure that materials are available when needed. Ericson, Mona (2004)

Unfortunately, the improper handling and storing of materials often result in costly injuries. In relation to the above, the supply chain is defined here as a part of a network that supplies a specific product from raw material to final customer it is a whole commercial chain embedded in the network (Hertz 2001) with a common objective of efficiency and effectiveness. Efficiency is an internal standard of performance while effectiveness is an external standard of fit to various groups' demands (Pfeffer *et al.*, 1978).

Material handling equipment is all equipment that relates to the movement, storage, control and protection of materials, goods and products throughout the process of manufacturing, distribution, consumption and disposal. Material handling equipment is the mechanical equipment involved in the complete system. Material handling equipment is generally separated into four main categories: storage and handling equipment, engineered systems, industrial trucks, and bulk material handling, (Mona 2004)

Ways in which material handling equipment can improve efficiency.

Material handling equipment is used to increase throughput, control costs, and maximize productivity. There are several ways to determine if the material handling equipment is achieving peak efficiency. These include capturing all relevant data related to the warehouse's operation (such as SKUs), measuring how many times an item is "touched" from the time it is ordered until it leaves the building, making sure you are using the proper picking technology, and keeping system downtime to a minimum. (Mona. 2004)

2.1.1 Types of material handling equipment

Storage and handling equipment is a category within the material handling industry. The equipment that falls under this description is usually non-automated storage equipment. Products such as Pallet rack, shelving, carts, etc. belong to storage and handling. Many of these products are often referred to as "catalog" items because they generally have globally accepted standards and are often sold as stock materials out of Material handling catalogs. (Mona. 2004)

Engineered systems are typically custom engineered material handling systems. Conveyors, Handling Robots, AS/RS, AGV and most other automated material handling systems fall into this category. Engineered systems are often a combination of products integrated to one system. Many distribution centers will optimize storage and picking by utilizing engineered systems such as pick modules and sortation systems. Peter Fredriksson *et al.*, (2004),

Equipment and utensils used for processing or otherwise handling edible product or ingredients must be of such material and construction to facilitate thorough cleaning and to ensure that their use will not cause the adulteration of product during processing, handling, or storage. Equipment and utensils must be maintained in sanitary condition so as not to adulterate product. (Walter *et al.*, 2001)

Industrial trucks; Industrial trucks usually refer to operator driven motorized warehouse vehicles. Industrial trucks assist the material handling system with

versatility; they can go where engineered systems cannot. Forklift trucks are the most common example of industrial trucks but certainly aren't the extent of the category. Tow tractors and stock chasers are additional examples of industrial trucks. Ericson, Mona (2004)

Bulk material handling; Bulk material handling equipment is used to move and store bulk materials such as ore, liquids, and cereals. This equipment is often seen on farms, mines, shipyards and refineries. This category is also explained in Bulk material handling. (*Dubois et al., 2003*)

2.1.2 Material Handling Systems - Different Types and Applications

Material handling systems are created in order to provide quicker automation services for several enterprises. They are essential parts for the material handling process. The systems will bring much comfort and ease on the part of the client especially those concerning how to automate company facilities. At times, if the client is lucky enough, the materials handling team will take care of the installation of the desired machinery for the business. (Hertz et al., 2001)

The system actually involves a set of services that clients will favor for their existing businesses. It involves system design and integration, factory automation, warehousing solutions and factory upgrade. Automatic guided vehicles, automated storage and retrieval systems and order fulfillment systems are common types of material handling systems. Below is an explanation of each of these types and the applications where it is utilized. Ericson, Mona (2004)

Automates storage and retrieval systems;

This system minimizes labor and utilization of floor space while vertical space is maximized. This is considered one of the contributors to the success of businesses worldwide. It is very efficient in reducing human intervention as it improves the company's performance and accuracy. Forsström, Birgitta (2003),

Applications for this type of material handling system are varied. The manufacturing process makes use of modern applications to increase efficiency in production, work-in-process storage and just-in-time delivery services. For archival and security applications, the system serves well by providing vaults where valued material may be sourced out for future consumption. In the world of electronics, it is capable of handling operation without the need for manual intervention. Other areas where this system is used are in production of food and beverages and conventional warehousing. (Gadde et al., 2003)

Automated guided vehicles; Automated guided vehicles are types of material handling systems growing popularly in several industries. It includes counterbalance and unit load vehicles as well as specialty style vehicles. Robotic transporters are employed to do the entire job and are based on Windows applications. The most common applications for AGV are aerospace, automotive, mail processing, manufacturing, plastics and warehousing industries. Ericson, Mona (2004)

2.1.3. Other types of systems for the material handling process

Aside from the above-mentioned types of material handling systems, there are other kinds included in the list. Order fulfillment systems are used in order to handle concerns of clients when it comes to the ordering process. This may either be operator-assisted or fully automated. Another is the sorting system which is a crucial portion of the distribution system. This is essential in order to work with timetables and produce high quality goods for industries relying upon these systems. Conveyors, logistics software, and palletizing or depalletizing are also examples of systems for the material handling process. Ericson, Mona (2004)

2.1.4. Types of Material Handling Equipment

Material handling equipment (MHE) is equipment used to move, store or control material inside facilities. These facilities can include the manufacturing plants where the material is created or the disposal sites where it ends up. Large material handling equipment includes cranes, trucks and lifts. Smaller equipment includes things such

as storage bins, dollies and even cartons. The purpose of material handling equipment is to quickly, safely and more easily move material when compared with doing it manually. Forsström, Birgitta (2003),

Transportation refers to any type of material handling equipment that moves material from one spot to another. This can be from one facility to another, from one end of the facility to the other or simply from a docking platform to a storage area. Industrial trucks, haulers, cranes, conveyer belts and lifts are types of transportation equipment. Cranes are used to move material but are restricted to certain zones. Trucks can move material anywhere, and conveyor belts move material along a single path. (Birgitta. 2003),

Positioning; positioning equipment is used to make sure material is passed off safely. This can mean pivoting, turning or stacking the material. The equipment that handles positioned material can be transportation or storage equipment. Positioning equipment is mainly used to cut down on worker fatigue, ensure safer handling if the equipment is awkward to move manually, and move equipment that is too dangerous for human hands. (Forsström, 2003),

Unit Loads; Unit loads are equipment that stabilizes or holds equipment to avoid movement during transportation or storage. Pallets, skids, bags, cartons, load containers, crates, straps, wrapping, bins, baskets and racks are many of the different kinds of loading equipment. This equipment also allows more than one item of the same material to be held by one unit load. For example, an egg carton can carry a dozen eggs at once. Peter Fredriksson *et al.*, (2004),

Storage allows material to sit in a facility, site or container for a long time until it is needed. Racks, bins, frames and shelves are common examples. However, there are many types of racks, including pallet racks, push-back racks, sliding racks and cantilever racks. The purpose of storage is to allow production to continue without having to stop because of an excess of the product being produced. Storage is also

useful for keeping surpluses in case of a sudden demand or shortage elsewhere. (Birgitta. 2003),

Control; in large manufacturing, storage, and disposal facilities, having a way to keep track of all of the material is important. Although it can be done manually on a smaller scale, large facilities rely on control and identification equipment. Items such as bar codes, radio frequency tags and magnetic strips make up a majority of control equipment. Peter Fredriksson *et al.*, (2004),

What employees should know before moving, handling, and storing materials In addition to training and education, applying general safety principles such as proper work practices, equipment, and controls can help reduce workplace accidents involving the moving, handling, and storing of materials. Whether moving materials manually or mechanically, your employees should know and understand the potential hazards associated with the task at hand and how to control their workplaces to minimize the danger. (Birgitta. 2003),

Because numerous injuries can result from improperly handling and storing materials, workers should also be aware of accidents that may result from the unsafe or improper handling of equipment as well as from improper work practices. In addition, workers should be able to recognize the methods for eliminating or at least minimizing the occurrence of such accidents. Employers and employees should examine their workplaces to detect any unsafe or unhealthful conditions, practices, or equipment and take corrective action. (Fredriksson *et al.*, 2004),

Potential hazards for workers; Workers frequently cite the weight and bulkiness of objects that they lift as major contributing factors to their injuries. In 1999, for example, more than 420,000 workplace accidents resulted in back injuries. Bending, followed by twisting and turning, were the more commonly cited movements that caused back injuries. (Birgitta. 2003),

Other hazards include falling objects, improperly stacked materials, and various types of equipment. You should make your employees aware of potential injuries that can occur when manually moving materials, including the following: Strains and sprains from lifting loads improperly or from carrying loads that are either too large or too heavy, Fractures and bruises caused by being struck by materials or by being caught in pinch points, and; Cuts and bruises caused by falling materials that have been improperly stored or by incorrectly cutting ties or other securing devices.

Precautions should workers take when moving materials manually

When moving materials manually, workers should attach handles or holders to loads. In addition, workers should always wear appropriate personal protective equipment and use proper lifting techniques. To prevent injury from oversize loads, workers should seek help in the following: When a load is so bulky that employees cannot properly grasp or lift it, When employees cannot see around or over a load, or When employees cannot safely handle a load. Using the following personal protective equipment prevents needless injuries when manually moving materials: Hand and forearm protection, such as gloves, for loads with sharp or rough edges. Eye protection. Steel-toed safety shoes or boots. Metal, fiber, or plastic metatarsal guards to protect the instep area from impact or compression. (Hines et al., 2000)

Employees should use blocking materials to manage loads safely. Workers should also be cautious when placing blocks under a raised load to ensure that the load is not released before removing their hands from under the load. Blocking materials and timbers should be large and strong enough to support the load safely. In addition to materials with cracks, workers should not use materials with rounded corners, splintered pieces, or dry rot for blocking. Forsström, Birgitta (2003),

2.1.5 Avoid Storage Hazards

Stored materials must not create a hazard for employees.

Employers should make workers aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored when stacking and piling materials.

To prevent creating hazards when storing materials, employers must do the following: Keep storage areas free from accumulated materials that cause tripping, fires, or explosions, or that may contribute to the harboring of rats and other pests; Place stored materials inside buildings that are under construction and at least 6 feet from hoist ways, or inside floor openings and at least 10 feet away from exterior walls; Separate noncompatible material; and Equip employees who work on stored grain in silos, hoppers, or tanks, with lifelines and safety belts. In addition, workers should consider placing bound material on racks, and secure it by stacking, blocking, or interlocking to prevent it from sliding, falling, or collapsing. (Fredriksson et al., 2003)

Safeguards must workers follow when stacking materials; Stacking materials can be dangerous if workers do not follow safety guidelines. Falling materials and collapsing loads can crush or pin workers, causing injuries or death. To help prevent injuries when stacking materials, workers must do the following: Stack lumber no more than 16 feet high if it is handled manually, and no more than 20 feet if using a forklift; Remove all nails from used lumber before stacking; Stack and level lumber on solidly supported bracing; Ensure that stacks are stable and self-supporting; Do not store pipes and bars in racks that face main aisles to avoid creating a hazard to passersby when removing supplies; Stack bags and bundles in interlocking rows to keep them secure; and Stack bagged material by stepping back the layers and cross-keying the bags at least every ten layers (to remove bags from the stack, start from the top row first). Forsström, Birgitta (2003),

During materials stacking activities, workers must also do the following: Store baled paper and rags inside a building no closer than 18 inches to the walls, partitions, or sprinkler heads; Band boxed materials or secure them with cross-ties or shrink plastic fiber; Stack drums, barrels, and kegs symmetrically; Block the bottom tiers of drums, barrels, and kegs to keep them from rolling if stored on their sides;

Place planks, sheets of plywood dunnage, or pallets between each tier of drums, barrels, and kegs to make a firm, flat, stacking surface when stacking on end; Chock

the bottom tier of drums, barrels, and kegs on each side to prevent shifting in either direction when stacking two or more tiers high; and Stack and block poles as well as structural steel, bar stock, and other cylindrical materials to prevent spreading or tilting unless they are in racks. (Birgitta. 2003),

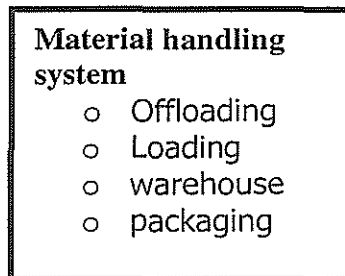
2.2 Conceptual Framework.

Efficiency; Organizational efficiency is defined as an internal standard of performance (Pfeffer and Salancik 1978) and is approximately a construct "for doing the things right". From a resource dependence perspective efficiency is an independent measure for evaluating organizational productivity: Output produced per resources utilized should equal 100 % inclusive losses. Efficiency seen in this formula is a good measure of a closed system's output, such as an organization from a machine-bureaucratic perspective when produced output is the same as profit. Forsström, Birgitta (2003),

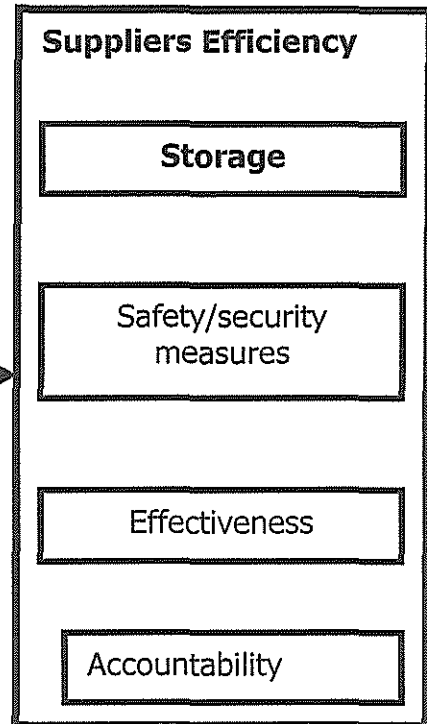
The conceptualization of efficiency and effectiveness has its roots in system theory. Definition of the system is difficult for a quasi-organization as a supply chain that has blurred structural boundaries. Defining the system as processes of activities implies that the meaning of and the relation between efficiency and effectiveness might change as well. Ericson, Mona (2004)

Figure 1. Conceptual framework

Independent Variable



Dependent Variable



All material handling should be the result of a deliberate plan where the needs, performance objectives and functional specification of the proposed methods are completely defined at the outset. Peter Fredriksson et al., (2004),

However, making evaluations of activity systems, as supply chains, rather than organizations is more complex as boundaries is flux (Hoek 1998). Håkansson and Prenkert (2004) conceptualize efficiency based on a dyadic system's exchange value. Exchange value is evaluated by the two actors regarding the activity system's utilization of resources. A supply chain is an activity system, that is to say. an exchange system of producing/using activities as well as a networking activity system. If we elaborate that one firm use its resources to 100 %, it seems to be efficient. However, in a producing/using activity system, as a supply chain, this might be inefficient due to expensive inventory costs. Efficiency is thus a quantitative as well as a qualitative evaluation in a supply chain as goals have to be negotiated.

Suppliers' Efficiency is seen as a "value free" quantifiable measure highly valued as a rationale for activities such as improvement programs or as a base for rewards. This is problematic for social systems (Pfeffer and Salancik 1978) as efficiency is two dimensional (input and output) and social systems usually have several dimensions in their output. An example of this is the interdependencies within as well as among supply chains that cause efficiency in one supply chain and inefficiency in overlapping supply chains (Dubois et al. 2003). This means that efficiency within a supply-chain system is difficult to optimize due to limited knowledge of interdependencies within the supply chain as well as towards other supply chains. This is evident in the ramp-up phase of Volvo's S80 model. Despite a trade-off where Volvo's suppliers balanced between efficiency (through scale) and unique solutions they contributed to the supply chain efficiency (Corswant et al. 2004). This implies that the supply chain is a specific activity system, where the efficiency goal is compound and negotiated along the chain.

Peter Fredriksson et al., (2004),

This is seen in findings from Volvo Car Corporation evaluation of their suppliers (Fredriksson and Gadde 2003). The efficiency is therein described as a compound evaluation of quality, delivery, cost, and overall capability that is not only planned and reviewed in the relationship but also a measure of the relationship. The efficiency of the producing/using system is influenced by serial interdependencies through relationships. Efficiency is thus evaluated of several parties within the exchange system and negotiated interdependencies determine efficiency goals.

Two variables are left to elaborate on from the formula of efficiency: Resources utilized and losses. These variables capture lots of efficiency goals targeted in JIT, Kaizen and lean production. Volvo Car Corporation uses a JIT-production, which is mirrored in their use of efficiency evaluation. Utilization of scarce resources has cost implications but also implications regarding capability to innovate (Fredriksson and Gadde 2003). This implies that losses in an evaluation of one firm or one relationship are efficiency to the supply chain.

Supplier Efficiency thereby means exploitation of interdependencies, reliability and control of resources. This means that efficiency is neither value-free nor easily quantifiable measure. Thus, the supply chain efficiency as an internal standard of performance differs from the organizational efficiency as the activity system's *boundaries* shifts. Activities are also a problematic unit of analysis as they are *interdependent* and changes influence dynamically several outcomes. And finally the meaning of efficiency is ambiguous as very high resource utilization is not necessarily perceived as efficiency. . Forsström, Birgitta (2003).

In its simplest form a material handling plan defines the material (what) and the moves (when and where); together they define the method (how and who). The plan should be developed in consultation between the planner(s) and all who will use and benefit from the equipment to be employed. Success in planning large scale material handling projects generally requires a team approach involving suppliers, consultants when appropriate, and end user specialists from management, engineering, computer and information systems, finance and operations.

The material handling plan should reflect the strategic objectives of the organization as well as the more immediate needs. The plan should document existing methods and problems, physical and economic constraints, and future requirements and goals. The plan should promote concurrent engineering of product, process design, process layout, and material handling methods, as opposed to independent and sequential design practices. Forsström, Birgitta (2003),

2.3. Important Safety Measures.

To reduce the number of accidents associated with workplace equipment, employers must train employees in the proper use and limitations of the equipment they operate. In addition to powered industrial trucks, this includes knowing how to safely and effectively use equipment such as conveyors, cranes, and slings. Employers can reduce injuries resulting from handling and storing materials by using some basic safety procedures such as adopting sound ergonomics practices, taking general fire safety precautions, and keeping aisles and passageways clear. Peter Fredriksson et al., (2004),

2.3.1 Safety measures should employers take regarding conveyors

When using conveyors, workers may get their hands caught in nip points where the conveyor medium runs near the frame or over support members or rollers. Workers also may be struck by material falling off the conveyor, or they may get caught in the conveyor and drawn into the conveyor path as a result. To prevent or reduce the severity of an injury, employers must take the following precautions to protect workers: Install an emergency button or pull cord designed to stop the conveyor at the employee's work station. Install emergency stop cables that extend the entire length of continuously accessible conveyor belts so that the cables can be accessed from any location along the conveyor. Design the emergency stop switch so that it must be reset before the conveyor can be restarted.

Ensure that appropriate personnel inspect the conveyor and clear the stoppage before restarting a conveyor that has stopped due to an overload. Prohibit employees from riding on a materials-handling conveyor. Provide guards where conveyors pass over work areas or aisles to keep employees from being struck by falling material. (If the crossover is low enough for workers to SDV Transami into it, mark the guard with a warning sign or paint it a bright color to protect employees.)

Cover screw conveyors completely except at loading and discharging points. (At those points, guards must protect employees against contacting the moving screw. The guards are movable, and they must be interlocked to prevent conveyor movement when the guards are not in place.) Forsström, Birgitta (2003),

Safety measures should employers take regarding cranes

Employers must permit only thoroughly trained and competent workers to operate cranes. Operators should know what they are lifting and what it weighs. For example, the rated capacity of mobile cranes varies with the length of the boom and the boom radius. When a crane has a telescoping boom, a load may be safe to lift at a short boom length or a short boom radius, but may overload the crane when the boom is extended and the radius increases. Peter Fredriksson et al., (2004),

To reduce the severity of an injury, employers must take the following precautions:

Equip all cranes that have adjustable booms with boom angle indicators.

Provide cranes with telescoping booms with some means to determine boom lengths unless the load rating is independent of the boom length. Post load rating charts in the cab of cab-operated cranes. (Fredriksson and Gadde 2003).

Require workers to always check the crane's load chart to ensure that the crane will not be overloaded by operating conditions. Instruct workers to plan lifts before starting them to ensure that they are safe.

Tell workers to take additional precautions and exercise extra care when operating around power lines.

Teach workers that outriggers on mobile cranes must rest on firm ground, on timbers, or be sufficiently cribbed to spread the weight of the crane and the load over a large enough area. (Some mobile cranes cannot operate with outriggers in the traveling position.) Direct workers to always keep hoisting chains and ropes free of kinks or twists and never wrapped around a load. (Fredriksson and Gadde 2003).

Train workers to attach loads to the load hook by slings, fixtures, and other devices that have the capacity to support the load on the hook.

Instruct workers to pad sharp edges of loads to prevent cutting slings.

Teach workers to maintain proper sling angles so that slings are not loaded in excess of their capacity. Peter Fredriksson et al., (2004),

Ensure that all cranes are inspected frequently by persons thoroughly familiar with the crane, the methods of inspecting the crane, and what can make the crane unserviceable. Crane activity, the severity of use, and environmental conditions should determine inspection schedules. Peter Fredriksson et al., (2004),

Ensure that the critical parts of a crane such as crane operating mechanisms, hooks, air, or hydraulic system components and other load-carrying components are inspected daily for

any maladjustment, deterioration, leakage, deformation, or other damage. (Fredriksson and Gadde 2003).

As an employer, you must designate a competent person to conduct inspections of slings before and during use, especially when service conditions warrant. In addition, you must ensure that workers observe the following precautions when working with slings: Remove immediately damaged or defective slings from service. Do not shorten slings with knots or bolts or other makeshift devices. Do not kink sling legs. Do not load slings beyond their rated capacity. Keep suspended loads clear of all obstructions. Remain clear of loads about to be lifted and suspended. Do not engage in shock loading. Avoid sudden crane acceleration and deceleration when moving suspended loads.

Precautions should workers take when moving materials mechanically

Using mechanical equipment to move and store materials increases the potential for employee injuries. Workers must be aware of both manual handling safety concerns and safe equipment operating techniques. Employees should avoid overloading equipment when moving materials mechanically by letting the weight, size, and shape of the material being moved dictate the type of equipment used. All materials- handling equipment has rated capacities that determine the maximum weight the equipment can safely handle and the conditions under which it can handle that weight. Employers must ensure that the equipment-rated capacity is displayed on each piece of equipment and is not exceeded except for load testing. (Fredriksson and Gadde 2003).

Although workers may be knowledgeable about powered equipment, they should take precautions when stacking and storing material. When picking up items with a powered industrial truck, workers must do the following: Center the load on the forks as close to the mast as possible to minimize the potential for the truck tipping or the load falling, Avoid overloading a lift truck because it impairs control and causes tipping over, Do not place extra weight on the rear of a counterbalanced forklift to allow an overload, Adjust the load to the lowest position when traveling, Follow the truck manufacturer's operational requirements, and Pile and cross-tier all stacked loads correctly when possible.

Workers who handle and store materials often use fork trucks, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electrical motors or internal combustion engines. Employers must make these workers aware of the safety requirements pertaining the design, maintenance, and use of these trucks. (Fredriksson and Gadde 2003).

Safety requirements for design ; All new powered industrial trucks, except vehicles intended primarily for earth moving or over-the-road hauling, must meet the design and construction requirements for powered industrial trucks established in the Trucks approved for fire safety also must bear a label, or some other identifying mark, indicating acceptance by a nationally recognized testing laboratory. Peter Fredriksson et al., (2004),

Safety requirements for modification; You and your employees must not make modifications and additions affecting capacity and safe operation of the trucks without the manufacturer's prior written approval. In these cases, you must change capacity, operation, and maintenance instruction plates and tags or decals to reflect the new information. If the truck is equipped with front-end attachments that are not factory installed, the user must request that the truck be marked to identify these attachments and show the truck's approximate weight including the installed attachment when it is at maximum elevation with its load laterally centered. (Fredriksson and Gadde 2003).

When operating or maintaining powered industrial trucks, you and your employees must consider the following safety precautions: Fit high-lift rider trucks with an overhead guard if permitted by operating conditions.

Equip fork trucks with vertical load backrest extensions according to manufacturers' specifications if the load presents a hazard. Locate battery-charging installations in designated areas. Provide facilities for flushing and neutralizing spilled electrolytes when changing or recharging batteries to prevent fires, to protect the charging apparatus from being damaged by the trucks, and to adequately ventilate fumes in the charging area from gassing batteries. Hertz, Susanne (2001)

Provide conveyor, overhead hoist, or equivalent materials handling equipment for handling batteries. Provide auxiliary directional lighting on the truck where general lighting is less than 2 lumens per square foot. Hertz, Susanne (2001)

Do not place arms and legs between the uprights of the mast or outside the running lines of the truck. Set brakes and put other adequate protection in place to prevent movement of trucks, trailers, or railroad cars when using powered industrial trucks to load or unload materials onto them. Hertz, Susanne (2001)

Provide sufficient headroom under overhead installations, lights, pipes, and sprinkler systems. Provide personnel on the loading platform with the means to shut off power to the truck whenever a truck is equipped with vertical only (or vertical and horizontal) controls elevatable with the lifting carriage or forks for lifting personnel.

Secure dockboards or bridge plates properly so they won't move when equipment moves over them. Forsström, Birgitta (2003), Handle only stable or safely arranged loads.

Exercise caution when handling tools. Disconnect batteries before repairing electrical systems on trucks.

Ensure that replacement parts on industrial trucks are equivalent to the original ones.

Training requirements for operators of powered industrial trucks

Effective March 1, 1999, employers must develop a training program specific to the type of truck to be driven and the working conditions encountered. Employers must also evaluate the operator's performance in the workplace and certify that each operator has successfully received the training needed. The certification must include the name of the operator, the date of training, the date of evaluation, and the identity of the person(s) performing the training or evaluation. In addition, you must conduct an evaluation of each powered industrial truck operator's performance at least once every 3 years. Forsström, Birgitta (2003),

You must also conduct such an evaluation as well as refresher training if one of the following applies: Operator is observed operating the vehicle in an unsafe manner; Operator is involved in an accident or near-miss incident; Operator receives an evaluation revealing unsafe operation of the truck; Operator is assigned to drive a different type of truck; or Condition in the workplace changes in a manner that could affect safe operation of the truck.

2.4. SUPPLIERS EFFECTIVENESS AND EFFICIENCY AT SDV TRANSAMI NTINDA NAKAWA DIVISION

Pfeffer and Salancik (2003) foresee conflict when one stakeholder's demand constraints other stakeholder's demand, which is the case for the supply chain actors. Conflict but also co-operation gives "lesson's learnt" in one exchange process that is leveraged in other exchange processes. The evaluators we are concerned with are customers; customers seen in the producing/using activity system as well as in the networking activity system.

Suppliers are effective if they deliver what is asked for, no matter if they are bound to fill their warehouses to manage, i.e. if they manage the task inefficiently. In supply chain management research is effectiveness equalized with supply chains' flexibility and agility to customer demand. Forsström, Birgitta (2003),

Designing MH systems; As you have seen, to study the design of each of the categories mentioned above will take ages, and serve not much purpose. We take the example of the design of a conveyor based system, to get some idea of the METHODS that are useful in making design decisions. Conveyors can be categorized in several different ways. On the basis of their conceptual layout, we use the following two categories: (1) Open vs. Re-circulating. Open conveyor systems have fixed material entry and exit points. Materials go across the system only once, and need to be carried back to the entry point and re-loaded if they need transportation across the system. Re-circulating conveyors form a closed loop, such that materials once loaded can travel on them for ever. (2) Uni-directional vs. Bi-directional. Most conveyors operate uni-directionally, that is, at a given point on the conveyor, the materials can only travel in one direction. Some sophisticated conveyors (for example, the Bosch Flexible Assembly System in our Manufacturing Systems Lab) are bi-

directional. Bi-directional conveyors are often modular in structure. Each module forms one segment of the conveyor, and can be individually switched to go forward or backward. Therefore these systems need some form of automatic control to managed proper material flow between stations in a shop. The figures below show schematics of typical uni-directional (that is, the conveyor cannot reverse its direction) conveyor systems Forsström, Birgitta (2003),

Pfeffer and Salancik argue that efficiency and effectiveness are constructs that should be seen as independent of each other from a resource dependence perspective. Liljegren argues that these constructs are interrelated and complex from an industrial network perspective (Liljegren 1988). Lately development of these constructs describes a unidirectional influence; where effectiveness is dependent on efficiency (Håkansson and Prenkert 2004). The effectiveness and efficiency are outcome of activity systems with two different value creation processes; exchange and use. We are especially interested in how these interrelate to each other. Forsström, Birgitta (2003),

Therefore we use an analytical framework of "dualism, dualities and beyond" (Ericson 2004) and illuminate that efficiency and effectiveness cannot be seen as a harmonious way to value. Sometimes efficiency and effectiveness are contradictory constructs, e.g. when firms internalize demands of effectiveness to a call for efficiency (Pfeffer and Salancik 1978).

The analytical framework of dualism, duality and beyond (Ericson 2004) is a structure to describe effectiveness and efficiency. First efficiency and effectiveness will be separately described in a dualism as if there were no middle ground between them, this to distinct the constructs instead of interpreting them through each other (figure 1). Dualism is defined as opposites that complement each other. Forsström, Birgitta (2003),

2.4.1 Efficiency and Effectiveness Independent

In the resource dependence theory organizational efficiency and effectiveness are seen as independent standards to evaluate an organization: "Organizations can be both efficient and effective, neither efficient nor effective, effective but not efficient, or efficient but not

effective" (p. 35 Pfeffer and Salancik 1978) This independence is claimed out of organizations' possession and utilization of resources.

The ownership delimits what is a within system (efficiency) and what is the external to the system (effectiveness). The external measure evaluates the environmental fit of the organization. The underlying logic is based on a static situation. Håkansson and Prenkert (2004) argue that efficiency and effectiveness are based on two dynamic processes that have different logic and content. Efficiency is based on exchange value, and is dyadic, while effectiveness' is contextually determined and based on network's use value.

The effectiveness is the use value of the production system evaluated by the customer. Effectiveness is accessed when deliveries is in line with what is agreed upon in contractual or verbal agreements. The user is taking advantage of the facilities' outcome with higher involvement than at the product level integration of the production process and exploitation of serial interdependencies is exchanged and valued by the user. This implies that efficiency and effectiveness is interrelated at this level of analysis. The customer buys the capacity, which extends the organizational boundary of the exchange system to involve the customer. Supply chain integration is often a case of dyadic and sequential integration (Fawcett and Magnan 2002). The closed activity system is linking the different production facilities but also the interfaces the actors have to other actors.

The outcome as exchange value is difficult to plan as what specific resources to deploy is unclear before and difficult to quantify the exchange value includes the earlier discussed exchange systems outcome (product vs. money and capacity) and adds more general services and knowledge. The exchange value is coordination to other relationships i.e. leverage of resources. This coordination is sometimes seen as use value (Håkansson and Prenkert 2004) but we argue that the leverage spring out as a value of the exchange, an exploitation of possibilities in the interface; the knowledge gained is used for advantage. Use value involves exploring these services and knowledge with existing ones and potential reciprocal changes to restructure exchange systems. Exchange value is taking serial, pooled as well as reciprocal interdependencies into account for the direct relationship.

Leverage of pooled and reciprocal interdependencies is outcome of indirect relationships. The output depends on knowledge of the other party, and adaptation of resources. The effectiveness is the adaptations made to enhance value for the customer. An effective relationship with lead users facilitates the efficient activity system enclosed in the dyadic relationship.

If any of the producer or user is a "lead-user" the outcome for the other actor is emphasized due to the reciprocal dependencies. This means that exchange value might amplitude effectiveness. The direct and indirect relationships have similar efficiency and effectiveness but the use value is extended as the system to explore is wider. How is this interrelatedness commensurable with the external vs. internal perspective of use value vs. exchange value? It seems to be difficult to separate an external to an internal perspective of outcome of the activity system. Even if efficiency and effectiveness are defined as independent of each other and divided by the organizational boundary, these boundaries are blurred by actual activities. Forsström *et al.*, (2003),

External stakeholders become internal as a supply chain have actors that are suppliers and customers simultaneously. If the organization has discretion to initiate, maintain, or end activities then these activities are within the boundaries (Pfeffer and Salancik 1978).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter covered research design, area of the study, population of the study, sampling design, sample size, sources of information, Data collection instruments, Research procedures, Validity and Reliability, Data analysis and presentation, Ethical consideration as well as Research limitations.

3.1 Research Design.

This is the overall plan or strategy for conducting the research and for this case, the research study employed; qualitative, as well as quantitative techniques. The study employed to determine the quantitative terms the extent to which the variables are related, thus the level to which Material Handling Systems are related to suppliers' efficiency of heavy Commercial Transport. (Amin 2005:218). The quantitative pattern used in that it was utilize techniques and measurement that generate numerical or quantifiable data and statistical tools were utilized for analysis (Mugenda and Mugenda, 2003) on the qualitative part the study employed in order to obtain in-depth point of view of the respondents (Amin, 2005) According to Saunders, Lewis (2003), the design enables the researcher to carryout in-depth investigation into the subject matter.

3.2 Research Population

The study comprised a population size of 100 and a sample size of 30 were selected with employees from Finance section, procurement and logistic department, general operation and from marketing and inventory section totaling to 100. These employees are selected because majority of them engage in daily transaction of their respective desks/sections at SDV Transami.

3.3 Sample design

The researcher used simple random sampling techniques in that where one department closes, another will be put into consideration. Respondents are to be identified depending on their willingness and availability during the study exercise. The various departments at SDV Transami will be selected randomly.

3.4 Sample Size

A total of thirty (30) respondents were selected for the study as illustrated in table 1 below;

Category	Number
Finance section	7
procurement and logistic department	9
general operation	7
marketing and inventory section	7
Total number of respondents	30

3.5 Sources of Information

3.5.1 Secondary Data

The whole process involved a critical stare at existing literature from textbooks on material handling and suppliers' efficiency from libraries, company profile, manuals journals articles and internet search engines in search for relevant information.

3.5.2 Primary data

Primary data was obtained from respondents who were selected to participate in the study and responses generated from structured and semi-structured questionnaires that were prepared by the researcher. Field research was conducted by the researcher where interviews and questionnaires were administered to obtain primary data from respondents in the selected area. Hence interviews and questionnaires constitute instruments for primary data collection.

3.6 Research Instruments

The data collection instruments were basically self-administered questionnaires, which were comprise of open and close-ended questions that require respondents to answer all the questions to the best of their best knowledge. Interviews were also used in data collection from which the researcher had to ask questions and respondents answer from selected departments, employees and Heads of department. The interview were supplemented with document Analysis of the various financial reports/Data to assess their performance and credit worthiness which would help to determine their financial position for selection as a financial deserving enterprise.

3.6.1 Interviews;

An interview guide was used especially with the public relations officers of the Kampala SDV Transami who will also lead the interviewer to the officer in-charge of material and accounts. The researcher carried out a face-to-face interview with these interviewees. The research was preferred because it was promote answer to the statement of the problem. This was greatly benefit both the parties involved, thus the interview, the financial managers and the employees of this business enterprise.

3.6.2 Questionnaires;

These are pre-formulated written set of questions to which the respondent were appended their answers. Questionnaires are an efficient data collection tools when the researcher knows what is required and how to measure the variable of interest. There are two methods of administering questionnaires, thus personally or mailing to the respondent. For this particular case, researcher personally administered the questionnaires to the targeted respondents. The preference for the questionnaire based on the fact that they save time especially when handling a large study population scattered geographically and can be stored for future reference. Questionnaires were also give straight forward answers and therefore easy to evaluate (Joworski and Kohli 1993)

3.6.3 Document Analysis

Relevant documents like material handling records, periodicals, newspapers, personal documents internet journal, article, financial reports, and other research reports will be consulted for triangulation purposes. This data that was collected were the issues concerning, material handling and supplier's efficiency, the factors influencing general performance and the available literature on these factors, solutions/techniques that they come up with to curb these factors and why they are not helping to curb the situation.

3.7 Research Procedures

The researcher obtained an introductory letter from the School of Kampala International University, School of Business and Management. (refer to Appendices) . The researcher sought for permission to conduct the study from the officials of Kampala SDV Transami Logistics

3.8 Validity and Reliability

Here pre-test questionnaires and individual consultation were used to establish the perspectives of the respondents about the Accounting Information system. The qualitative and quantitative data collected during the interviews were coded, categorized, assembled, conceptually organized, interpreted and presented thematically in accordance with the researcher questions in order to make descriptive and qualitative conclusions. Since the researcher's independent variable is categorical and the dependent one continuous, the researcher were used a reliability analysis scale (ALPHA) as a statistical method of analyzing data, thereafter, data were subjected to the statistical programme.

3.9 Data Analysis and Presentation

After collecting data, only correctly filled questionnaires were coded, edited and analyzed. Analysis were carried out by use of simple and complex frequency tables where necessary cross tabulation, percentages, and true findings will be represented using tables.

3.10 Ethical Consideration

The researcher obtained an introductory letter from the Kampala International University, School of Business and Management which were presented to the concerned Officials for permission to conduct this study. During data collection, the rights of individuals were respected. For example the researcher has to get the consent of all the respondents and ensure confidentiality of their responses and all the necessary protocol observed. For checking quality control, there were pre-testing of the research instruments, supervision and working with research assistants and continuous editing of questionnaires before leaving respondents as well as daily evaluation of field.

3.11 Limitations of the Study

The study faced the following limitations

- (i) Most of the departments and organizations officials in SDV Transami Suppliers are very busy hence accordingly their time to a researcher were not easy. The researcher resolved this by setting appointments and adjust were possible or delivering questionnaire to their respective sections/desk and collecting them later.
- (ii) Lack of trust from the respondents is another uphill task to overcome this, the interviewer will have to use communication skills and provide the introductory letter before seeking the required information

CHAPTER FOUR

DATA INTERPRETATION, PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter presents, interprets and analyses key findings from the study. The findings are presented in frequency tables and percentages. Data was collected from employees on the SDV Transami handling practices on operational efficiency.

4.1 Materials handling and storage methods at SDV Transami Ntinda Nakawa Division

This objective sought to assess Materials handling and storage methods at SDV Transami Ntinda Nakawa Division. Information concerning this variable was collected using questions from the questionnaire and responses were tabulated as shown in 4.2.1:

Table 4.1.1: Whether Employees know before moving, handling, and storing materials?

Response	Frequency	Percentage (%)
Highly Relevant	09	30.0
Relevant	19	63.3
irrelevant	0	0
Highly Irrelevant	02	6.7
Total	30	100.0

Sources: Primary Data

Table 4.1.1 indicated that most of the respondents (19 or 63.3%) held a different view on whether sourcing exposes the institution to supply side risks, nine (30.0%) accepted, while two (6.7%) were not sure whether sourcing of materials exposes the institution to material handling practices. This indicates that the institution does not always source for materials or equipments for her operations.

The above findings were in agreement with Ericson, Mona (2004) that Handling and storing materials involve diverse operations such as hoisting tons of steel with a crane; driving a truck loaded with concrete blocks; carrying bags or materials manually; and stacking palletized bricks or other materials such as drums, barrels, kegs, and lumber. The efficient handling and storing of materials are vital to industry. In addition to raw materials, these operations provide a continuous flow of parts and assemblies through the workplace and ensure that materials are available when needed.

A successful operation in a firm depends on the set handling strategies.

The relationship between these two factors goes a little deeper than simply mutual dependency. They inform each other. Operational effectiveness is about having functions in the organisation that work well. These functions are, of course, the organisation's skill sets or 'core competencies' and therefore, as Porter points out, must fit together and work together to implement the strategy. On the other hand, the possible strategies available to an organisation are constrained, at least in the medium term, by the skill sets available to implement them. A motorcycle manufacturer may pursue a strategy to diversify into car manufacture, but is unlikely to be able to, say, enter the ice cream business because the functional skills required are radically different. Strategy may demand capability, but capability in turn constrains strategy. (Michael E2001-2)

Table 4.1.2: There are potential hazards for workers

Response	Frequency	Percentage (%)
Strongly Agree	20	66.7
Agree	08	26.7
Disagree	02	6.7
Strongly Agree		
Total	30	100.0

Sources: Primary Data

From table 4.1.2, most of the respondents (20 or 66.7%) Strongly Agree that There are potential hazards for workers, followed by (08 or 26.7%) Agree, while only two (6.7%) noted that it was irrelevant. This could be attributed to the fact that, the institution sub contracts for most of her materials and equipments with her suppliers.

In relation to the above data majority of the respondents accepted and argued that Customer Relationship Management to Sales is also affect; Sales in a simple and concise definition is an act of selling. A person that sells or carries out sales activities is a sales man. A sales person is key in sales because goods and products will not sell themselves. Someone is expected to serve as the brain behind the selling force.

The sales Person who without mincing words is the brain behind the sales is expected to exemplify some distinct characters and aptitude towards buyers and customers in order to drive home more order. In view of these, this researcher has decided to consider the importance of human relationship management in sales. Aside from Pricing which is a key factor in any activity that involves selling, human relationship is also another important drive in sales.

Human relationship management can be explained as the way a sales man relates with his customers putting in mind the saying that 'the customer is a king' and should be treated as one. The level of intimacy of a sales man with his customer can help sky rocket sales notwithstanding the price because when confidence and trust is built buying from such sales man becomes inevitable. From my experience as a salesman, i have discovered that most people buy out of emotion and the love they have for me as a sales person (one of the respondents commented).

Even when the price is bad, most of them could not resist placing their orders. Human relationship management is so key to sales because its a very useful mean of retaining customers. That birthday gift, the Christmas message e.t.c can make a lot of sense to some of your customers, thereby increasing your sales and building a long lasting business relationship between you as the sales man and your customer.

Table 4.1.3: There Precautions should workers take when moving materials manually

Response	Frequency	Percentage (%)
Highly relevant	09	30.0
Relevant	13	43.3
Irrelevant		
Highly irrelevant	08	26.7
Total	30	100.0

Sources: Primary Data

Table 4.1.3 shows that (13 or 43.3%) of the respondents acknowledged that, There Precautions should workers take when moving materials manually, followed by nine (30.0%) highly relevant, while eight (26.7%) observed that it was highly irrelevant to involve HANDLING personnel. This implies that the institution makes use of Handlings specialists to recommend and approve appropriate equipment and materials for use.

On addition to the above, today, handling strategies are more a part of a business's success than ever before. Not only has technology given companies the opportunity to truly make purchasing more efficient and inexpensive, but companies are now spending a larger percentage of their revenue on products and services than they were thirty years ago. Most manufacturers spend around 60% of their money on the supplies that are necessary to keep the business running. As a result of these changes, more companies need to put in place some best practices that can guide their purchasing decisions and that can help them make their business a success.

Before evaluating any best practices, however, companies need to have a handle on one extremely important aspect of their business: the cost drivers. Cost drivers are all those elements and ingredients that determine the total cost of a business process. Once they've identified those elements, they can then take action and try to lower those costs whenever possible. Plus, companies can continue to investigate those elements and to assess possible alternatives or changes that might save them

further money. Unfortunately for many businesses, this information is not something they already know. Many companies simply don't have a clear understanding of what these cost drivers are, and this cripples their ability to develop best practices right from the start.

Another best practice is the wise use of technology. Many businesses make the mistake of bringing in costly and complicated new technology, then leaving their workforce to learn how to use it and to adjust to the dramatic change. They also wrongly view the implementation of new technology as a HANDLING strategy when it is really simply a tool that enables a strategy to be successful. Before new technology is brought in to the purchasing picture, a sound supply strategy needs to be laid out and that technology needs to be placed in the right part of the big picture.

The next best practice that will help companies develop a successful HANDLING strategy is strong support from the company's top management. Many of these managers take a completely hands-off approach, but their involvement can be helpful. First, they need to provide adequate funding for the program. When there's not enough money, the program will never work. They need to hire individuals who are knowledgeable about the program being implemented and who will be able to implement a strategy. Additionally, they have to convince the lower level managers and employees that they are truly committed to the endeavor. No one wants to spend months learning new technology and adapting to a new approach to doing business if it is simply going to be changed at a moment's notice.

Finally, companies should take a team-based approach to handling. The purchasing department should not be solely responsible for making the company's strategy a success. Instead, it should involve individuals from throughout the company and from all different departments. In teams, company personnel can work together in order to achieve the larger goals of the business's designated HANDLING strategy.

Accurate Demand ; Another very important factor before MRP is implemented is to

get the Demand accuracy. The demand should be expressed in the production units. Independent demand could include, the open orders, backlog, anticipation and spare parts requirement. This is one of the most difficult part. In many organizations, this could flow down from Master Production Schedule Planning (MPSP). *MPSP is a statement of production, not a Sales and operating plan.* While MPSP is prepared at family level, MRP drills down to SKU level.

In relation to document analysis , the researcher found out that HANDLING practices are relevant as suggested by though respondents due to their use if future reference . Sample form used for accreditation of material/logistics by SDV Transami is as follows;

Table 4.1.4: There are precautions that workers take when moving materials mechanically

Response	Frequency	Percentage (%)
Highly relevant	24	80.0
Relevant	04	13.3
irrelevant	02	6.7
Highly irrelevant	00	00.0
Total	30	100.0

Sources: Primary Data

From table 4.1.4, it can be seen that most of the respondents (24 or 80%) accepted that There are precautions that workers take when moving materials mechanically , four (13.3%) held a divergent view, while (02 or 6.7%) irrelevant. This implies that the institution undertakes materials/ equipment surveys in markets to ascertain which suppliers and markets equipments will be obtained.

A handling practice brings about important simplifications of the mro handling process and reduces this operational workload for buyers by decentralizing the operational handling process. if the handling process is to be faster and more convenient, the number of authorization stages must be radically reduced. babcock

borsig, for example, eliminated its authorization workflow altogether. at buyer, all employees may authorize their own purchasing operations up to a limit of 1,500. sap reduced the number of authorization stages from six to one.

supplier management is another area of organizational change. handling practices provide the opportunity to establish preferred suppliers in the area as well (Smeltzer, 2001). for this purpose it is necessary to implement supplier management as part of the e-handling project. as most of the large companies have decentralized handling structures in place, all of the companies analyzed implemented a central coordination instance in order to have better control over the products and services to be purchased on a company-wide basis. bayer, for example, conducted a pooling project prior to the implementation of its e-handling solution in order to bundle volumes on a regional and, where possible, even on a global level. (smeltzer, 2001; poole and durieux, 1999)

Table 4.1.5: There are precautions must workers take to avoid storage hazards

Response	Frequency	Percentage (%)
Highly relevant	04	13.3
Relevant	18	60.0
Irrelevant	08	26.7
Highly irrelevant		
Total	30	100.0

Sources: Primary Data

Table 4.1.5 shows that eighteen (60.0%) of the respondents reported that There are precautions must workers take to avoid storage hazards, while four (13.3%) accepted that an established sourcing system is available within the institution. This is attributed to the reality that most of the hospital requirements are not sourced from a wide range of suppliers.

4.2 Important safety measures of SDV Transami, Ntinda Nakawa Division.

This objective sought to assess the important safety measures of SDV Transami, Ntinda Nakawa Division. Information concerning this variable was collated using questions in the questionnaire and responses were tabulated as shown in the tables 4.3.1.

Table 4.2.1: Employees are aware of safety measures to take regarding conveyors

Method	Frequency	Percentage (%)
Yes	16	53.3
No	14	46.7
Total	30	100.0

Sources: Primary Data

Findings in table 4.2.1 show that majority of the respondents (16 or 53.3%) acknowledged that Employees are aware of safety measures to take regarding conveyors, followed by (08 or 26.7%) relevant, while six or 20 percent observed that it was irrelevant to undertake supplier performance monitoring. This implies that the institution recognizes the importance of supplier monitoring in enhancing value and quality materials.

Table 4.2.2: There are safety measures should employers take regarding cranes

Response	Frequency	Percentage (%)
Highly relevant	10	33.3
Relevant	05	16.7
Irrelevant		
Highly irrelevant	15	50.0
Total	30	100.0

Sources: Primary Data

Responses in table 4.3.2 indicated (15 or 50%) of the respondents accepted that Highly irrelevant there are safety measures should employers take regarding cranes, followed by ten (33.3%) Highly relevant, while five (16.7%) agreed. This indicates

that the institution collaboratively interacts and coordinates her activities with suppliers for materials requirements.

Table 4.2.3: Employers do to ensure the safe use of slings and other sharp equipments

Response	Frequency	Percentage (%)
Highly relevant	13	43.3
Relevant	08	26.7
Irrelevant	03	10.0
Highly irrelevant	06	20.0
Total	30	100.0

Sources: Primary Data

Responses in table 4.2.3 illustrate that (13 or 43.3%) of the respondents observed that Employers do to ensure the safe use of slings and other sharp equipments, followed by eight (26.6%) relevant, six (20.0%) highly irrelevant, while three (10.0%) said it was irrelevant. This could be attributed to the fact that the hospital has a small number of suppliers from whom equipments and materials as procured or sourced.

Table 4.2.4: Relevancy of SDV TRANSAMI handling practices in increasing organization's visibility to supply sources to enable it concentrate on internal operations.

Response	Frequency	Percentage (%)
Highly relevant	15	50.0
Relevant	10	33.3
I don't know	05	16.7
Total	30	100.0

Sources: Primary Data

Table 4.2.4 shows that (15 or 50.0%) of the respondents indicated that it was highly relevant to handling practices in increasing organization's visibility to supply sources to enable it concentrate on internal operations, followed by ten (33.3%) relevant, while

five (16.7%) noted that it was irrelevant. This implies that the equipments designs to suite specific functions for which it is intended to perform. However, these findings are in line with Forsström, Birgitta (2003), that Potential hazards for workers; Workers frequently cite the weight and bulkiness of objects that they lift as major contributing factors to their injuries. In 1999, for example, more than 420,000 workplace accidents resulted in back injuries. Bending, followed by twisting and turning, were the more commonly cited movements that caused back injuries.

Table 4.2.5: whether the Employers do to protect workers who operate powered industrial trucks?

Response	Frequency	Percentage (%)
Highly relevant	18	60.0
Relevant	09	30.0
Irrelevant	03	10.0
Total	30	100.0

Sources: Primary Data

Table 4.2.5 illustrate that most of the respondents (18 or 60.0%) observed that it was highly relevant to the Employers do to protect workers who operate powered industrial trucks, followed by nine (30.0%) relevant, while one (3.3%) observed that it was highly irrelevant to certify suppliers of equipments and materials. This could be attributed to the fact that the Institution procures her materials and equipments from certified providers to ensure quality and reliability while performing the task for which it was bought for. Thus When using conveyors, workers may get their hands caught in nip points where the conveyor medium runs near the frame or over support members or rollers. Workers also may be struck by material falling off the conveyor, or they may get caught in the conveyor and drawn into the conveyor path as a result. To prevent or reduce the severity of an injury, employers must take the following precautions to protect workers: Install an emergency button or pull cord designed to stop the conveyor at the employee's work station. Install emergency stop cables that extend the entire length of continuously accessible conveyor belts so

that the cables can be accessed from any location along the conveyor. Design the emergency stop switch so that it must be reset before the conveyor can be restarted. Ensure that appropriate personnel inspect the conveyor and clear the stoppage before restarting a conveyor that has stopped due to an overload. Prohibit employees from riding on a materials-handling conveyor.

Provide guards where conveyors pass over work areas or aisles to keep employees from being struck by falling material. (If the crossover is low enough for workers to run into it, mark the guard with a warning sign or paint it a bright color to protect employees.)

Table 4.2.6 There are available safety requirements for design

Response	Frequency	Percentage (%)
Strongly Agree	20	66.7
Agree	08	26.7
Disagree	02	6.7
Strongly Agree	00	0.00
Total	30	100.0

Sources: Primary Data

From table 4.2.6, most of the respondents (20 or 66.7%) Strongly agree that there are safety requirements for design, followed by (08 or 26.7%) Agree, while only two (6.7%) noted that it was irrelevant. This could be attributed to the fact that, the institution sub contracts for most of her materials and equipments with her suppliers. The findings are in agreement with Peter Frederickson et al., (2004), that Because numerous injuries can result from improperly handling and storing materials, workers should also be aware of accidents that may result from the unsafe or improper handling of equipment as well as from improper work practices. In addition, workers should be able to recognize the methods for eliminating or at least minimizing the occurrence of such accidents. Employers and employees should examine their workplaces to detect any unsafe or unhealthful conditions, practices, or equipment and take corrective action.

Table 4.2.7 Safety precautions should employers and workers observe when operating or maintaining powered industrial trucks

Response	Frequency	Percentage (%)
Strongly agree	12	40.0
Agree	10	33.3
Disagree	06	20.0
Strongly disagree	02	6.7
Total	30	100.0

Sources: Primary Data

Table 4.4.3 shows that (12 or 40.0%) of the respondents strongly agreed that Safety precautions should employers and workers observe when operating or maintaining powered industrial trucks, followed by agree (10 or 33.3%), disagree (06 or 20.0%) while two (6.7%) strongly disagreed. This indicates that the institution tries to buffer situations of out stock to keep her clients obtaining the services they require on a timely and daily basis.

The findings are in line with When moving materials manually, workers should attach handles or holders to loads. In addition, workers should always wear appropriate personal protective equipment and use proper lifting techniques. To prevent injury from oversize loads, workers should seek help in the following: When a load is so bulky that employees cannot properly grasp or lift it, When employees cannot see around or over a load, or When employees cannot safely handle a load. Using the following personal protective equipment prevents needless injuries when manually moving materials: Hand and forearm protection, such as gloves, for loads with sharp or rough edges. Eye protection. Steel-toed safety shoes or boots. Metal, fiber, or plastic metatarsal guards to protect the instep area from impact or compression. (Hines et al., 2000)

4.3. Good suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division
 This objective sought to assess the Good supplier's effectiveness and efficiency at SDV Transami Ntinda Nakawa Division. Information concerning this variable was collected using questions from the questionnaire and responses were tabulated as shown in the tables below;

Table 4.4.1: Whether managing Handling practices improve product quality?

Response	Frequency	Percentage (%)
Yes	17	56.7
No	09	30.0
Not sure	04	13.3
Total	30	100.0

Sources: Primary Data

From table 4.4.1, it can be seen that most of the respondents (17 or 56.7%) agreed that managing risks improves the quality of supplies, nine (30.0%) opposed the notion, while four (13.3%) were not sure. This could be attributed to the fact that the entity continuously monitors materials/equipment delivery from suppliers to prevent the risk of damage or deterioration. Thus Employees should use blocking materials to manage loads safely. Workers should also be cautious when placing blocks under a raised load to ensure that the load is not released before removing their hands from under the load. Blocking materials and timbers should be large and strong enough to support the load safely. In addition to materials with cracks, workers should not use materials with rounded corners, splintered pieces, or dry rot for blocking. Forsström, Birgitta (2003),

Table 4.4.2: Whether minimizing stock outs is a tactic to handling and logistic management?

Response	Frequency	Percentage (%)
Yes	21	70.0
No	06	20.0
Not sure	03	10.0
Total	30	100.0

Sources: Primary Data

Twenty one (70.0%) of the respondents accepted that maintaining some stocks within the stores helps to hedge against supply uncertainties, six (20.0%) opposed the notion, while three (10.0%) were not sure of the practice. This implies that the entity has always buffer stocks to counter supply disruptions. Thus the findings are in line with Employers should make workers aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored when stacking and piling materials. To prevent creating hazards when storing materials, employers must do the following: Keep storage areas free from accumulated materials that cause tripping, fires, or explosions, or that may contribute to the harboring of rats and other pests; Place stored materials inside buildings that are under construction and at least 6 feet from hoist ways, or inside floor openings and at least 10 feet away from exterior walls; Separate noncompatible material; and Equip employees who work on stored grain in silos, hoppers, or tanks, with lifelines and safety belts. In addition, workers should consider placing bound material on racks, and secure it by stacking, blocking, or interlocking to prevent it from sliding, falling, or collapsing. (Fredriksson et al., 2003)

Table 4.4.3: Whether material handling practices is associated with increases reputation?

Response	Frequency	Percentage (%)
Strongly agree	12	40.0
Agree	10	33.3
Disagree	06	20.0
Strongly disagree	02	6.7
Total	30	100.0

Sources: Primary Data

Table 4.4.3 shows that (12 or 40.0%) of the respondents strongly agreed that proper risk management is associated with increased reputation, followed by agree (10 or 33.3%), disagree (06 or 20.0%) while two (6.7%) strongly disagreed. This indicates that the institution tries to buffer situations of out stock to keep her clients obtaining the services they require on a timely and daily basis.

The costs incurred in personal sales are escalating: experts estimate that costs in personal sales have risen by 200% over the last twenty years. If we look at the real sales active working time of a salesperson, the cost of a client visit in certain branches often costs between 250 and 400 pounds. Furthermore, an increasing number of visits are necessary in order to gain just one new client. The only way to get out of this cul-de-sac is to implement measures to improve efficiency. The following details give you an overview of the five most important measures which you can implement.

They also argued that, Good material handling Practices for Official Development Assistance helps in Transparency; *Transparency in rules of material handling Principle:* Members will make accessible, in appropriate detail, general material handling rules for their official development assistance to the recipients of their aid, to eligible suppliers and to other DAC Members.

Transparency in information on individual supply contracts; Members will inform the recipients of their aid, at the time of the aid offer, of the safety rules to be applied and of the eligible sources of handling. With respect to individual contracts, interested and eligible national and foreign suppliers shall have equal and timely access to information on the nature of the goods and services to be procured and on applicable material handling rules.

International competitive bidding (ICB); Members will consider the scope for enlarged use of international competitive material handling to the extent compatible with their HANDLING policies. In particular, they will encourage recipient countries, other donors and International Financial Institutions to develop proposals for co-financing and other co-operative financing arrangements providing for international competitive material handling and will consider such proposals positively.

National competitive bidding (NCB); *Principle:* As a general rule (and unless ICB or other forms of international competition can be applied), Members will encourage the use of National Competitive Bidding as the main procedure for handling under tied aid conditions. They will make explicit under which conditions they require the application of NCB and under which conditions they impose more stringent handling procedures or permit more liberal Handling procedures. The bidding procedures under NCB should follow internationally recognised minimum standards (concerning information and pre-qualification of potential suppliers, content and publication of bidding documents, appraisal of bids and contract award).

Handling specifications should be stated in a non-restrictive manner to encourage the widest possible participation. There should be participation of at least three potential suppliers but if fewer than three responsive bids are received, award may be made to the lowest bidder if the price is reasonable.

Strengthening administrative capacity; Members will explore with interested developing countries the scope for improving their HANDLING practices and

institutions and will try to respond positively to requests by developing countries to train staff of their purchasing agencies.

Minimum Conditions for Effective International Competitive Bidding; The main purpose of International Competitive Bidding (ICB) is to ensure that recipient countries obtain value for money and to give all potential exporters an equal chance to enter bids in such a way that the importer can compare them objectively and is thus able to determine the optimal offer. In order for a HANDLING procedure to qualify as "effective international competitive bidding", the following minimum conditions must be fulfilled.

Table 4.4.4: Whether material management and risks management increases organization's share price amongst stakeholders?

Response	Frequency	Percentage (%)
Yes	08	26.7
No	16	53.3
Not sure	06	20.0
Total	30	100.0

Sources: Primary Data

Findings from table 4.4.4 reveal that (16 or 53.3%) of the respondents observed that that managing HANDLING risks does not increase organization's share price, eight (26.7%) believed that managing handling risks does increase share price, while six (20.0%) were not sure.

Table 4.4.5: Whether managing material risks can minimize delays in delivery?

Response	Frequency	Percentage (%)
Yes	22	73.3
No	06	20.0
Not sure	02	6.7
Total	30	100.0

Sources: Primary Data

Table 4.4.5 illustrates that most of the respondents (22 or 73.3%) accepted that managing HANDLING risks minimizes delays in materials delivery, six (20.0%) opposed the idea, while two (6.7%) were not sure whether HANDLING risks management minimizes delays upon delivery of materials. This indicates that the entity has in place mechanisms to expedite materials delivery.

The above was in agreement with Matthew Roper 2008) he argued, leverages IBM's broad range of capabilities, including strategy, process improvement, enablement services and technology, to help you secure better prices and achieve greater efficiency, tighter control of spend and improved service levels.

Enterprises need operational and supplier performance measurements to know how they are doing, yet many lack expertise in strategic sourcing and the ability to effectively manage supplier relationships. Putting best practices to work for you; IBM's approach to effective supply chain Handling practices builds on your past efforts and investments. Our strategy covers three focus areas: business transformation, to help you change existing HANDLING practices using best-practices business processes and leading technology; core business application solutions, to help you improve business efficiency; and enterprise integration, to help you reduce costs and increase productivity.

IBM offers the following capabilities to help you better manage enterprise Spend: material handling strategy and supplier opportunity assessment .To help you build an on demand supply chain, IBM brings a wide range of capabilities to your enterprise. IBM can assess your on demand maturity, prioritize which on demand initiatives could have the greatest impact on shareholder value and implement off-the-shelf or customized on demand solutions.

Leveraging lessons learned for big benefits; In addition to completing hundreds of successful customer engagements, IBM went through its own handling transformation, across multiple divisions. Reorganizing Handling infrastructure for

effectiveness, enhancing professional skills, improving governance and compliance with HANDLING policies, instituting sound business processes and building a unified technical architecture enabled IBM to save US\$42 billion in managed spend.

Confidence in global supply chain solutions; With professionals in more than 160 countries globally, IBM Business Consulting Services is among the world’s largest consulting services organization, providing clients with business process and industry expertise, a deep understanding of technology solutions that address specific industry issues, and the proven ability to design, build and SDV Transami those solutions in a way that has the potential to deliver bottom-line business value. Detailed industry knowledge and extensive, strategic relationships with leading and emerging supply chain application vendors including SAP, Ariba Inc., Perfect Commerce, Oracle and Emptoris Inc.allow us to develop customized supply chain solutions that are designed to address your unique requirements. Known for innovative thinking built on focused business and technology research, IBM is committed to helping you fuse business insight with technology to drive lasting economic advantage.

4.4. Interview Interpretation and Analysis

Table 4.4.1: Whether managing Handling practices improve product quality?

Response	Frequency	Percentage (%)
Yes	17	56.7
No	09	30.0
Not sure	04	13.3
Total	30	100.0

Sources: Primary Data

From table 4.4.1, it can be seen that most of the respondents (17 or 56.7%) agreed that managing risks improves the quality of supplies, nine (30.0%) opposed the notion, while four (13.3%) were not sure. This could be attributed to the fact that the entity continuously monitors materials/equipment delivery from suppliers to prevent the risk of damage or deterioration.

Table 4.4.2: Whether minimizing stock outs is a tactic to material handling and logistic management?

Response	Frequency	Percentage (%)
Yes	21	70.0
No	06	20.0
Not sure	03	10.0
Total	30	100.0

Sources: Primary Data

Twenty one (70.0%) of the respondents accepted that maintaining some stocks within the stores helps to hedge against supply uncertainties, six (20.0%) opposed the notion, while three (10.0%) were not sure of the practice. This implies that the entity has always buffer stocks to counter supply disruptions.

Thus, to reduce the number of accidents associated with workplace equipment, employers must train employees in the proper use and limitations of the equipment they operate. In addition to powered industrial trucks, this includes knowing how to safely and effectively use equipment such as conveyors, cranes, and slings. Employers can reduce injuries resulting from handling and storing materials by using some basic safety procedures such as adopting sound ergonomics practices, taking general fire safety precautions, and keeping aisles and passageways clear. Peter Fredriksson et al., (2004),

Table 4.4.3: Whether handling practices is associated with increases reputation?

Response	Frequency	Percentage (%)
Strongly agree	12	40.0
Agree	10	33.3
Disagree	06	20.0
Strongly disagree	02	6.7
Total	30	100.0

Source: Primary Data

Table 4.5.3 shows that (12 or 40.0%) of the respondents strongly agreed that proper risk management is associated with increased reputation, followed by agree (10 or 33.3%), disagree (06 or 20.0%) while two (6.7%) strongly disagreed. This indicates that the institution tries to buffer situations of out stock to keep her clients obtaining the services they require on a timely and daily basis. Thus the findings are in line with (Fredriksson et al., 2003) Employers should make workers aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored when stacking and piling materials. To prevent creating hazards when storing materials, employers must do the following: Keep storage areas free from accumulated materials that cause tripping, fires, or explosions, or that may contribute to the harboring of rats and other pests; Place stored materials inside buildings that are under construction and at least 6 feet from hoist ways, or inside floor openings and at least 10 feet away from exterior walls; Separate noncompatible material; and Equip employees who work on stored grain in silos, hoppers, or tanks, with lifelines and safety belts. In addition, workers should consider placing bound material on racks, and secure it by stacking, blocking, or interlocking to prevent it from sliding, falling, or collapsing.

Table 4.5.4: Whether handling risks management increases organization's share price amongst stakeholders?

Response	Frequency	Percentage (%)
Yes	08	26.7
No	16	53.3
Not sure	06	20.0
Total	30	100.0

Source: Primary Data

Findings from table 4.5.4 reveal that (16 or 53.3%) of the respondents observed that that managing material handling risks does not increase organization's share price,

eight (26.7%) believed that managing risks does increase share price, while six (20.0%) were not sure.

Table 4.5.5: Whether managing material handling practices minimize delays in delivery?

Response	Frequency	Percentage (%)
Yes	22	73.3
No	06	20.0
Not sure	02	6.7
Total	30	100.0

Source: Primary Data

Table 4.5.5 illustrates that most of the respondents (22 or 73.3%) accepted that managing HANDLING risks minimizes delays in materials delivery, six (20.0%) opposed the idea, while two (6.7%) were not sure whether HANDLING risks management minimizes delays upon delivery of materials. This indicates that the entity has in place mechanisms to expedite materials delivery.

HoStacking materials can be dangerous if workers do not follow safety guidelines. Falling materials and collapsing loads can crush or pin workers, causing injuries or death. To help prevent injuries when stacking materials, workers must do the following: Stack lumber no more than 16 feet high if it is handled manually, and no more than 20 feet if using a forklift; Remove all nails from used lumber before stacking; Stack and level lumber on solidly supported bracing; Ensure that stacks are stable and self-supporting; Do not store pipes and bars in racks that face main aisles to avoid creating a hazard to passersby when removing supplies; Stack bags and bundles in interlocking rows to keep them secure; and Stack bagged material by stepping back the layers and cross-keying the bags at least every ten layers (to remove bags from the stack, start from the top row first). Forsström, Birgitta (2003),

During materials stacking activities, workers must also do the following:

Store baled paper and rags inside a building no closer than 18 inches to the walls, partitions, or sprinkler heads; Band boxed materials or secure them with cross-ties or shrink plastic fiber;

Stack drums, barrels, and kegs symmetrically;

Block the bottom tiers of drums, barrels, and kegs to keep them from rolling if stored on their sides; Place planks, sheets of plywood dunnage, or pallets between each tier of drums, barrels, and kegs to make a firm, flat, stacking surface when stacking on end;

Chock the bottom tier of drums, barrels, and kegs on each side to prevent shifting in either direction when stacking two or more tiers high; and Stack and block poles as well as structural steel, bar stock, and other cylindrical materials to prevent spreading or tilting unless they are in racks. Forsström, Birgitta (2003),

CHAPTER FIVE

DISCUSSION, SUMMARY CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter contains the discussion of the findings, summary, conclusions and recommendations. It presents the discussion based on an assessment of HANDLING risks management on operational effectiveness.

5.1 Discussion

Four main research objectives were being observed in this study. The results obtained from both the preliminary and secondary research questionnaires were used to scrutinize each research object in turn. A summary of the scrutiny of these four objectives is now provided.

5.1.1 Materials handling and storage methods at SDV Transami Ntinda Nakawa Division

The results of the research indicated that the majority of respondents had either fully realised, or partly realized, the importance of supplier relationships in containing or managing HANDLING risks to the institutions. In fact, over an average of 80 per cent responses to the secondary questionnaire indicated that respondents had achieved some level of success in their initiatives to combat supply uncertainties to the organisation, and only an average of about 16.7 per cent stated that supplier relationship efforts/initiative had been unsuccessful. This is in agreement with Thum (2008) who observed that supplier collaboration is key to successful HANDLING and provides the opportunity to understand the true product cost. He noted that working so closely with suppliers allows companies to understand aspects of product development such as true raw material costs and low-cost country sourcing strategies that influence the final cost of supply.

5.1.2 Important safety measures of SDV Transami, Ntinda Nakawa Division.

A number of techniques which underpin organization's philosophy to outsource and their effect on operational effectiveness were examined by the secondary questionnaire. In all, responses obtained indicated that the organisation out sources most of her material requirements. On average, total of 70 per cent of respondents indicated that they used sourcing techniques to obtain materials, while an average of 30 per cent of the investigated respondents opposed the view indicating the dangers brought about when out sourcing materials and equipments to be used by the organisation. In fact, purposively sampled respondents indicated that out sourced contracts expose the institution to high financial risks.

Hendricks and Singhal (2005) observed that while this rapid deployment of sourcing has increased most organization's exposure to material handling risks, mechanisms to enable visibility and management of these risks have not kept pace. The result has been dramatically increased reliance on key supplier, often accompanied by the development of more complex supplier interactions with growing numbers of touch points and dependencies.

5.1.3 Effective Practices to Manage material Handling and suppliers effectiveness and efficiency at SDV Transami Ntinda Nakawa Division

The respondents investigated appeared to place more importance on long-term strategies and objectives to managing risks inherent in processes and flow systems during operations and materials acquisition. On average, a total of 92 per cent of respondents linked their risk management strategies to their organization's long-term goals and objectives, whilst only 8 per cent of respondents were either not aware of or not active participants in materials acquisition and only depended on the systems operational outcomes to predict the likely effects. Zsidisin *et al.*, (2000) and Zsidisin (2003) concurs with this view when they drew attention to such initiatives as partnership formation, building strategic alliances, supplier development and developing supplier performance measurement systems. However, Mitchell (1995) implied that many of these approaches to risk reduction may be situation dependent.

As one can be seen, there are a number of approaches advocated for managing or reducing risk. However, there is one overriding drawback to the many approaches on offer as what one person sees as a means of reducing risk, another one sees as a means of increasing risk.

5.1.4 Benefits Of good material handling Practices

There is considerable evidence that failure to manage supply chain risks effectively can have a significant negative impact on organisations. The respondents examined attributed their benefits of effective risk management to improved product quality, increased reputation, and increase in share price and at the same time improve delivery of materials to clients and minimizing out of stock situations (Cousins *et al*, 2004). On average, a total of 98 per cent of respondents interviewed were in support of a comprehensive and robust risk management strategy to better match this era of rapid changing technology and product markets and increasing customer expectations in terms of better products, lower prices and quicker response times.

Purchasing best practice delivers profit growth; Would you take a pile of ten pound notes and set fire to them? I thought not. Yet that is exactly what an awful lot of businesses do in the way they approach their Purchasing.

Apart from salaries, the biggest area of expense for most businesses is purchasing. In our experience, a sharpened focus on buying can reduce a business's costs by as much as 20%. What would be the impact on your business of even a 10% saving on your total purchase bill?

All too often purchasing is treated as the poor relation compared with other functions within a business. Yet, apart from sales, no other area of a business has so much potential to impact on the bottom line. Every pound saved by better buying is a pound of additional profit. And it goes further than that. More value and improved innovation from your suppliers equate to a superior proposition for your customers.

So better buying can deliver *both* lower total cost *and* improved revenues. You ignore your organization's purchasing function at your peril.

Take a few moments to see how your business measures up. Review our checklist and see whether you can say, with your hand on your heart, that you really have a handle on your buying activities.

Tell-tale signs that your Purchasing function is not performing:

No reliable data. Your systems cannot tell you clearly and simply how much money is being spent in which category of expenditure, how many suppliers are being used for each category, and how and why each supplier is used. This applies not just to snapshots in monthly reporting, but to trends over time.

No regular review of Purchasing. Purchasing just happens, month in, month out. There's no regular benchmarking of new or existing suppliers to determine whether you are getting fair value.

Too many suppliers in the wrong areas. The wrong areas are low value-added purchases like office stationery which are essential for the business to function, but confer no strategic benefit. Dealing with too many low-value suppliers wastes your staff's time and diverts their attention from the important Purchasing areas. And you're almost certainly paying too much, because your buying power is dissipated.

Too few suppliers in the right areas. The right areas are high value-added purchases, directly linked to the core of your offer to the customer. If you are too dependent on a small number of key suppliers without up-to-date contracts and back-up strategies, your business is at risk.

No clear guidelines or policies. A sure sign is when Purchasing decisions are routinely referred upwards, because no clear policies and guidelines are in place. If you think you may have cause for concern, read on.

Purchasing strategies and their relationship to profit

The Purchasing Strategies matrix shows the relationship between your supplier base and their importance to your profitability. It shouldn't take long to map your existing set of suppliers onto this matrix (and if it does, that's almost certainly another tell-tale sign that your Purchasing needs a good review!).

Strategic Buying; the matrix defines the set of Purchasing strategies the business needs to adopt to maximize the benefit of good Purchasing practice. In the top two boxes we have those suppliers who have a critical impact on your business: subcontractors, perhaps, or suppliers of raw or semi-finished materials.

This Purchasing activity is strategic, and should be aimed at creating value for you and your customers. Too often, however, too many smaller firms are overly dependent on a small number of key suppliers. Their strategic supply activity is basically in the top left box, the Danger Zone. And it's not just a case of too few suppliers. Frequently their strategic Purchasing falls short in three other key respects: Reliance on out of date or inadequate contracts; No incentives for suppliers to improve, or to share cost savings with you; No real fall-back position if a critical supplier lets you down.

Best practice Purchasing will show you how to move, over time, out of the Danger Zone and into the Comfort Zone, where your business is less vulnerable in every respect.

Routine Purchasing, The bottom two boxes relate to your low value-added Purchasing: routine office supplies, for example, or utilities such as power and telecoms. This is non-strategic Purchasing, of low importance to your future commercial success. Your aim here will be to save money. But this still needs to be done properly and doing it properly means better profitability.

Joining a Purchasing Consortium to increase Purchasing power; As a smaller business you lack the negotiating power of larger players. One way to secure a better deal can

be to shift business to smaller suppliers, although this is not always possible in those categories like utilities dominated by a few big suppliers.

An effective alternative could be to join our Purchasing consortium, known as the BSA Consortium. This works by pooling demand from many different companies, thus increasing the Purchasing power of all individual member companies. Members who join also benefit from receiving improved Purchasing data. They drive up supply chain value through their collective power in the marketplaces that are managed by the consortium.

It's a particularly apt solution for low added-value, routine Purchasing. Savings vary from category to category but as a rule of thumb, members enjoy savings of between 10%-35% compared with the prices they were paying before.

Until recently best practice in Purchasing was largely confined to large companies. But there's no reason why smaller businesses shouldn't benefit as well – and in doing so build value for themselves and their customers and add to the bottom line!

5.2 Conclusion

The main aim of this study was to assess the impact of "*The Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport*" at SDV Transami . The outcomes of this study were surprising in that they yielded an overwhelming positive response towards material handling practices management initiatives from respondents. The majority of respondents revealed that they were aware of the detrimental effects of supply disruptions to operations and that initiative were underway to operationalise and put into effect an effective and efficient strategy aimed at combating the disaster of supply failure to the institution.

In their responses to the study, respondents highlighted their desire to forge strategic alliances and collaboration with suppliers of strategic items to ensure continued supply to the institution through effectively maintaining an efficient communication channel to ensure logistical flow of materials and information. Failure

to reflect a risk management framework in their daily activities is a weakness which organisations must avoid if they are to succeed in their chosen markets for goods and services.

Organisations can develop an effective risk management strategy that builds on strengths and core competencies whilst minimizing any disruptions that may be experienced to proposed delivery changes in the flow of materials. SDV Transami should attempt to develop its own risk strategy which can be developed in tandem with corporate strategy. By focusing on core business values, the institution can develop a strong stand alone risk management strategy to scale down threats to supply uncertainties.

Findings; Although handling practices have substantially streamlined the Material and coordination processes for indirect goods, many companies operate multiple material solutions. For integrated material handling solutions, the paper recognizes the need of an overall material handling strategy and organization, an alignment of various material handling practices along the supply chain process and the need for integrated system architectures. Companies also have to realize that no standardized Handling practice exists and that important success factors are "non-technical" in nature.

Findings of the Document Analysis:

According to document analysis, Losses due to Handling Related Inefficiencies - 7.19 – 9.4% of total contract values were identified as being paid by way of corrupt payments in Handling at both SDV Transami management levels.

CG Perception about Inefficiencies -73% - 79% of the CG interviewees said inefficiencies was non-existent or very limited in SDV TRANSAMIHANDLING while the Mission perceived HANDLING inefficiencies at the management level to be most prevalent in the higher levels of management

Effective anti-inefficiencies measures- Permanent prohibition of a person convicted of inefficiencies from holding any public office, restitution order to seize assets, Payment of informers/whistleblowers on conviction of offender, Increase salaries, Change legal burden of proof and Taxation penalties.

Level of Tolerance to Inefficiencies - 95% of the interviewees' perceived inefficiencies as a serious offence. This contradicted other assertions that SDV Transami tolerant to inefficiencies

5.3 Recommendations

While a good Handling practice is an effective supply strategy, companies in this volatile environment should therefore hedge against disruptions if they are to remain operational. Therefore, the mission should:-

1. Make it imperative for executives and risk managers to reassess how they manage the growing number of risks facing their organizations, especially those affecting supply chains. Effective supply chain risk management in organization goes beyond traditionally insured risks such as tangible assets and related liabilities; rather, it focuses on the assets as part of a process. With rapid change in today's international business environment contributing to increase risk exposure across all operational functions, senior management must consider a more comprehensive risk management program that emphasizes efficiencies and addresses a wide variety of traditional (or insurable) and nontraditional (or non insurable) risks.
2. Need to establish an effective monitoring and evaluation of the SDV TRANSAMI handling systems to determine capacity gaps at individual, organizational and country levels. However, need to determine the risks and vulnerable points at each stage of the handling /disposal process and put in place strategies to mitigate them.

3. Emphasize the importance of consistent political commitment and support from the highest levels of government. And also Build Partnerships and establish linkages with civic organisations, oversight agencies and donor partners to accelerate the fight against inefficiencies.
4. Keep pace with the dynamic changes taking place within the business environment; risk managers in cooperation with senior management must embed risk management practices into all mission-critical points along the supply chain. By teaching risk management techniques to key supply chain personnel, risk managers can encourage the use of appropriate risk-based decision-making techniques. This allows supply chain managers to make more informed distinctions between the competing priorities of process cost-effectiveness and controlled efficiency of enterprise wide risk exposures.
5. Place risk managers at the heart of the supply chain process by taking the time and effort to become intimately familiar with all the components that drive this critical business process. As a result, risk managers can influence risk decisions made within individual functional areas of the supply chain and guide decisions on which subsequent risk mitigation steps to take.
6. Organizations can develop an effective quality strategy built on the strengths and core competencies whilst minimizing any mishaps that may be experienced to proposed changes. SDV Transami should attempt to develop her own individual handling procedure which can be developed in tandem with that set by the government. By focusing on what it does best, SDV Transami departments can differentiate itself from other districts and drive home her guarantee of transparency and accountability to customers at the same time.
7. Human resource departments should at least address some of the immediate concerns of the staff so that elements of inefficiencies, selfishness and personal intrigue can be overcome.

8. SDV Transami should possibly consider an effective supply management policy which can be the key to managing the supply function effectively emphasizing the formation of strategic alliances to achieve the lowest total acquisition cost. And In tallying to sole sourcing, the SDV Transami offices in Kampala should also employ a supplier performance monitoring, continuous evaluation, and competitive bidding when a new product, or source, is needed.
9. It is consequently important that SDV Transami develops a comprehensive handling system which embraces all areas of the organization. The adoption of a comprehensive approach to quality should establish the concept of quality as the foundation stone on which the culture and structure of the organization is built. A comprehensive approach to HANDLING will ensure that quality becomes identical with each activity the local government undertakes. This sends a clear message to customers, competitors and employees alike that accountability and transparency are the lifeblood of the organization and is reflected in everything the organisation does.
10. Like any other organization/firm, SDV Transami supplies Logistics departments would be encouraged to voice their opinions and contribute to the policies on Handling. There is a need to screen effectively the people being offered employment in SDV Transami; they should be on merit and not other factors like relation, Effective coordination of agencies on inefficiencies issues and is comprised of handling sections' major anti-inefficiencies institutions, including the civil and military among others
11. There is a need to screen effectively the people being offered employment in local government bodies; they should be on merit and not other factors like relation, Effective coordination of agencies on inefficiencies issues and is comprised of Local governments' major anti-inefficiencies institutions, including the judiciary and police among others.

REFERENCES

- Corswant, Fredrik von, Anna Dubois, and Peter Fredriksson (2004), "*Organizing activities in industrial networks: The case of Volvo S80*," in 20th annual IMP conference. Copenhagen.
- Dubois, Anna, Kajsa Hulthe'n, and Ann-Charlott Pedersen (2003), "*Interdependence within and among 'supply chains'*," in 19th Annual IMP Conference. Lugano, Switzerland.
- Ericson, Mona (2004), *Strategic Change - dualism, duality and beyond*. Malmö: Liber.
- Fawcett, Stanley E. and Gregory M. Magnan (2002), "*The rhetoric and reality of supply chain integration*," International Journal of Physical Distribution & logistics Management, 32 (5), 339-61.
- Forsström, Birgitta (2003), "*A Conceptual Exploration Into 'Value Co-Creation' In The Context Of Industrial Buyer-Seller Relationships*," in 19:th IMP-conference. Lugano, Switzerland.
- Fredriksson, Peter and Lars-Erik Gadde (2003), "*Evaluation Of supplier Performance – The Case Of Volvo Car Corporation And Its Module Suppliers*," in 19:th IMP-conference. Lugano, Switzerland.
- Harland, Christine M., Richard C. Lamming, and Paul D. Cousins (1999), "*Developing the concept of supply strategy*," International Journal of Operations & Production Management, 19 (7), 650-73.
- Hertz, Susanne (2001), "*Dynamics of alliances in highly integrated supply chain networks*," International Journal of Logistics, 4 (2), 237-56.
- Hines, P., Richard Lamming, D. Jones, P. Cousins, and N. Rich (2000), "*Strategic Performance Measurement systems*," in *Value stream management - Strategy and excellence in the supply chain*. Harlow: Financial Times/Prentice Hall.
- Hoek, Remko I. van (1998), "*Measuring the unmeasurable" measuring and improving performance in the supply chain*," *Supply Chain Management*, 3 (4), 187-91.

- Håkansson, Håkan and David Ford (2002), "*How should companies interact in business networks?*," *Journal of Business Research*, 55, 133-39.
- Håkansson, Håkan, Inge-Jan Henjesand, and Alexandra Waluszewski (2004), "*Introduction: Rethinking Marketing*," in *Rethinking Marketing - developing a new understanding of markets*, Håkan Håkansson and Alexandra Waluszewski, Eds. 2004: Wiley.
- Håkansson, Håkan and Göran Persson (2004), "*Supply chain management: The logic of supply chains and networks*," *The International Journal of Logistics Management*, 15 (1), 11-26.
- Håkansson, Håkan and Frans Prenekert (2004), "*Exploring the Exchange Concept in Marketing*," in *Rethinking Marketing - developing a new understanding of markets*, Håkan Håkansson and Alexandra Waluszewski, Eds. 2004: Wiley.
- Håkansson, Håkan and Alexandra Waluszewski (2004), "*Conclusions: Reinterpreting the Four Ps*," in *Rethinking Marketing - developing a new understanding of markets*, Håkan Håkansson and Alexandra Waluszewski, Eds. 2004: Wiley.
- Mintzberg, Henry and James A. Waters (1998), "*Of strategies, deliberate and emergent*," *Strategic Management Journal*, 6, 257-72.
- Möller, K. E. Kristian and Pekka Törrönen (2003), "*Business suppliers' value creation potential: A capability-based analysis*," *Industrial Marketing Management*, 32 (2), 109-18.
- Pfeffer, Jeffrey and Gerald R. Salancik (2003), *The external control of organizations: a resource dependence perspective*. Stanford, Calif.: Stanford Business Books.
- (1978), *the external control of organizations: a resource dependence perspective*. New York: Harper & Row.
- Walter, Achim, Thomas Ritter, and Hans George Gemünden (2001), "*Value Creation in Buyer-Seller Relationships: Theoretical Considerations and Empirical Results from a Supplier's Perspective*," *Industrial Marketing Management*, 30, 365-77.
- Hopp and Spearman, pub. Irwin press; *Factory Physics*,

RESEARCH INSTRUMENTS
APPENDIX I: QUESTIONNAIRES.

Self administered questionnaires for employees of SDV Transami on *The Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport*; A case of SDV Transami, Nakawa Ntinda

School of Business and Management
Kampala International University
Department of Marketing

Dear Sir/Madam,

I am a student of Kampala International University Pursuing a Bachelors' Degree of Supplies and Procurement carrying out a research on "*The Impacts of Material Handling Systems on Suppliers Efficiency in Heavy Commercial Transport*" in Nakawa Division.

The questionnaire that follows below are addressed to respondents like you, upon the research study above, your contribution to the outcome of this research by attending to the stated questions will definitely be recognized.

You are therefore, required to *Fill* out the questions by putting a *Tick (✓)* in the box that corresponds with the appropriate answer or indicating your response where necessary.

The information you give will be treated with confidentiality. Your cooperation and honest opinions are highly appreciated.

Regards,

.....

BIRIKE IMMACULATE,
RESEARCHER, KAMPALA INTERNATIONAL UNIVERSITY

QUESTIONNAIRES

A. MATERIALS HANDLING AND STORAGE

1. What should your employees know before moving, handling, and storing materials?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

2. What are the potential hazards for workers?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

3. What precautions should workers take when moving materials manually?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

4. What precautions should workers take when moving materials mechanically?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

5. What precautions must workers take to avoid storage hazards?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

6. What safeguards must workers follow when stacking materials?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

B. IMPORTANT SAFETY MEASURES

7. What safety measures should employers take regarding conveyors?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

8. What safety measures should employers take regarding cranes?.

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree

E. Others (specify).....

9. What must employers do to ensure the safe use of slings?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

10. What must employers do to protect workers who operate powered industrial trucks?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

11. What are the safety requirements for design?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

12. What are the safety requirements for modification?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

13. What are the safety requirements for modification?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

14. What safety precautions should employers and workers observe when operating or maintaining powered industrial trucks?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

15. Are there any training requirements for operators of powered industrial trucks?

- A. Strongly Agree B. Agree
C. Strongly Disagree D. Disagree
E. Others (specify).....

Thank you for your cooperation.

APPENDIX II: STRUCTURED INTERVIEW GUIDE

1. What should your employees know before moving, handling, and storing materials?
2. What are the potential hazards for workers?
3. What precautions should workers take when moving materials manually?
4. What precautions should workers take when moving materials mechanically?
5. What precautions must workers take to avoid storage hazards?
6. What safeguards must workers follow when stacking materials?
7. What safety measures should employers take regarding conveyors?
8. What safety measures should employers take regarding cranes?.
9. What must employers do to ensure the safe use of slings?
10. What must employers do to protect workers who operate powered industrial trucks?
11. What are the safety requirements for design?
12. What are the safety requirements for modification?
13. What are the safety requirements for modification?
14. What safety precautions should employers and workers observe when operating or maintaining powered industrial trucks?
15. Are there any training requirements for operators of powered industrial trucks?

APPENDIX III: THE TIME FRAME OF THE STUDY

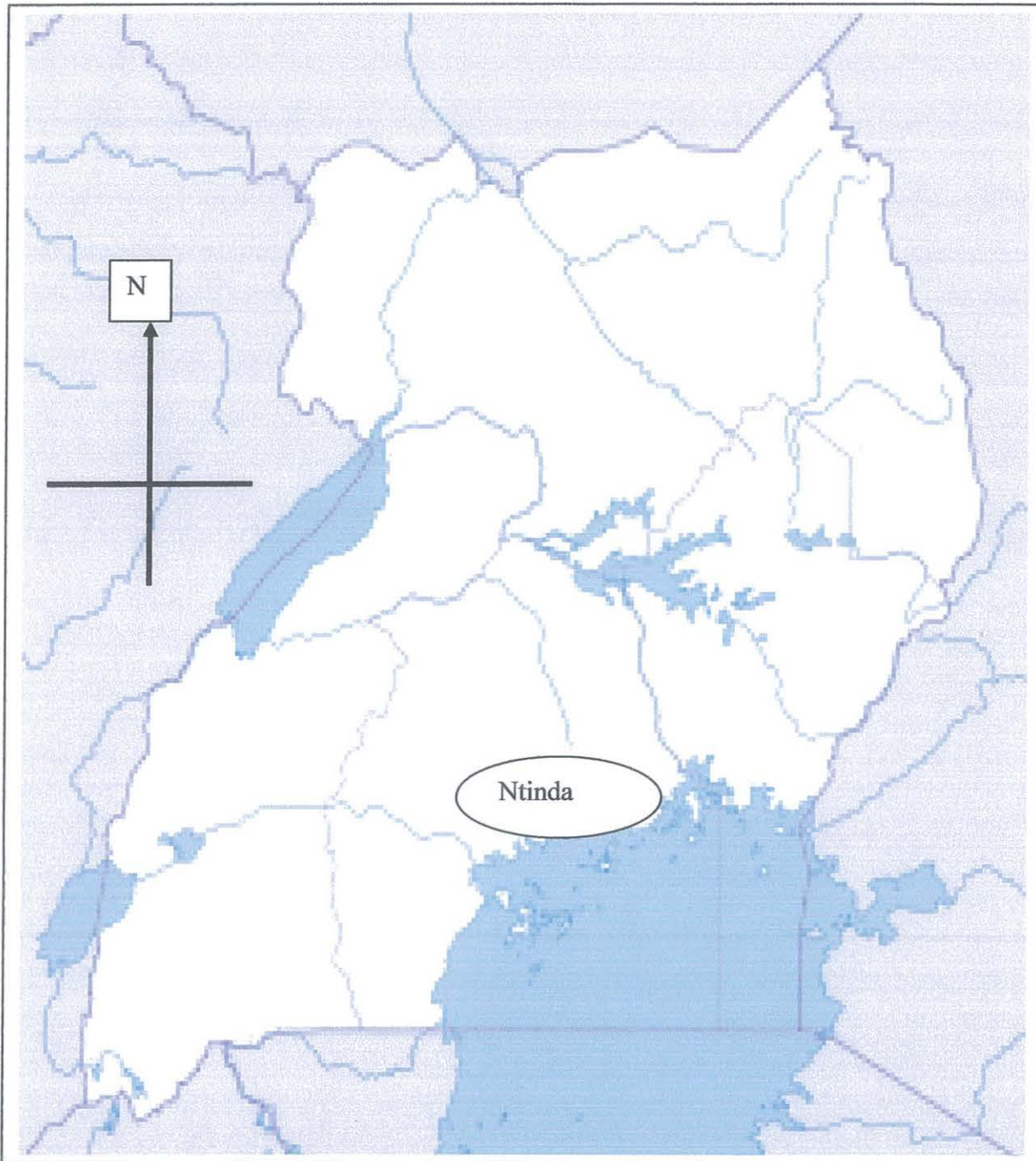
NO	ACTIVITY	SCHEDULE
1	Proposal	13 th - 22 ND January,2010
2	Data collection	29 th - 27 April, 2010
3	Submission of the Research proposal	25 th - 30 June, 2010
4	Dissertation writing	4 th - 18 July, 2010
5	Submission of the First draft of the Dissertation	26 th August ,2010
6	Submission of the second draft Dissertation	1 st - 5 th August ,2010
7	Submission of the final Dissertation	6 th - 18 August ,2010

APPENDIX IV: THE BUDGET FOR THE STUDY.

NO.	DESCRIPTION	QUANTITY	UNIT COST	Total
1.	Stationery		UGSHS	UGSHS
	A) 3 Ream of Photocopying Paper	3	8,500	25500
	B) 1 Ream Ruled Paper	1	7,000	7,000
	C) 5 Floppy Diskettes	5	1,000	5,000
	D) 6 Bic Pens	6	200	1,200
	E) 1 Flash Disk of 4.0 GB	1	35000	35000
	F) 6 Pencils	6	100	600
	Sub Total			74300
2.	Secretarial work/services			
	a) Typesetting		35,000	35,000
	b) Photocopying		15,000	15,000
	c) Binding	3 copies	15,000	45,000
	d) Printing	100 @	1500	150,000
	Sub Total			245,000
3.	Travel costs			
	a) Transport for research assistant	24 days	2000	48,000
	b) Examining interviews	5 days	4000	20,000
4	Data Treatment and analysis			285000
	a) Questionnaire administration			40,000
	b) Literature collection			60,000
	d) Data Interpretation			40,000
	Subtotal			290000
	Grand total			522,300

These funds were set aside and provided by the researcher for academic purposes only.

APPENDIX: V Sketch Map of Uganda showing the location of Ntinda (study Area)



Source: Google map 2010

Ntinda is bordered by Kyambogo to the east, Nakawa to the south, Naguru to the west, Bukoto to the northwest, Kigoowa to the north and Kiwaatule to the northeast. This location is approximately 8 kilometres (5.0 mi), by road, northeast of Kampala's central business district. The coordinates of Ntinda are:00 20 51N, 32 37 48E (Latitude:0.3475; Longitude:32.6300).