MAKERERE UNIVERSITY

GOVERNANCE STRUCTURES, ETHICAL BEHAVIOUR AND SUPPLY CHAIN PERFORMANCE OF ESSENTIAL MEDICINES IN EASTERN UGANDA

BY

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OCTOBER, 2010

DECLARATION

I Erinah Kanyange Mugerwa declare that this dissertation is a result of independent research and has not been submitted to any University or institution for the award of any academic qualification. Where works of others have been used, they have been acknowledged.

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2006/HD10/6158U

Signature…… **Date …….**

Candidate

APPROVAL

This dissertation has been submitted for examination with our approval as the University supervisors.

Dr. Joseph Ntayi

Signature …… Date……

Dr. Muhammed Ngoma

Signature …… Date……

DEDICATION

This work is dedicated to my beloved mother and the soul of my father who inspired and guided me to see the light plus all members of my family**.**

May God bless you all.

ACKNOWLEDGEMENT

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May all of you out there consider this to be a token of my gratefulness to you.

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LIST OF ACRONYMS

SPSS	-	Statistical Packages for Social Sciences
TC	-	Transactional Costs
JMS	-	Joint Medical Stores
NMS	-	National Medical Stores
UGX	-	Uganda Shillings
VI	-	Vertical Integration
SM	-	Spot Market
PC	-	Production Contracts
CF	-	Contract Farming
MC	-	Marketing Contracts
SCM	-	Supply Chain Management
TCA	-	Transaction Cost Analysis

ABSTRACT

The performance of the supply chain of essential medicines has raised a lot of public concern which prompted the study to examine the relationship between governance structures, transaction costs, ethical behaviour and supply chain performance of essential medicines in Eastern Uganda. A sample size of 310 respondents was selected using stratified random sampling for the Health centre/hospital officials and purposive sampling for the patients and National Medical store/manufacturers officers. Primary data was collected from 228 respondents through a quantitative cross- sectional survey using a correlation approach by use of research administered questionnaires and subjected to rigorous data processing and analysis using SPSS V16.

The findings showed that governance structures, ethical behaviour and transaction costs predicted up to 29.2% of the variance in supply chain performance. According to the study, all the study variables were significant predictors of supply chain performance of essential medicines. Governance structures were better predictors of supply chain performance of essential medicines compared to ethical behaviour and transaction costs. The study recommends that a research be carried out comprising other factors which were not part of the model but could predict supply chain performance of essential medicines. The study further recommended that the key players in the supply chain of essential medicines should ensure adherence to set policies, improve work ethics and endeavour to reduce on transaction costs.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Governance structures commonly referred to as a set of rules that governs transactions between parties in an exchange, are key in ensuring ethical behaviour and supply chain performance (Murray 2003). However, in cases of governance structures without ethical behaviour, supply chain performance will not be proper. Various names such as vertical coordination, channel types and distribution styles have been used in literature to refer to supply governance structures. Different governance structures are therefore characterized in extent, complexity and duration and may determine the level of vertical coordination. The co-existence of the various forms of governance structures in the supply chains is fuelled by the various governance structure types that vary in relevance according to the type of commodity, and the level of transaction cost (TC) which differs with the type of governance structure used (Boger, 2001). Moreover, Boger (2001) argued that the purpose of a firm's existence is not only to minimize transaction costs but also production costs for pursuing profit and enhancing the firms' supply chain performance outcomes. By extending Boger's argument, a firm's supply chain performance outcome which integrates various aspects of economic, non-economic and ethical parameters may be considered as an effective way of assessing the efficiency of the supply chain governance structure.

According to the transaction cost theory, the firms' decision to select a supply chain governance structure is made on the basis of comparative institutional efficiency, and ascertains which of the alternatives constitute the transaction cost minimizing condition (Kim,

1998). Whipple et al. (1999) argued that a particular governance structure type may be very efficient in reducing transaction costs in an exchange but may not be effective to provide services that satisfy customers. The issues of ethical behaviour and governance structures in procurement have become increasingly critical to many organizations, especially with regard to supply chains (Carter 2000). By embracing the intention and spirit of these requirements in all aspects of business, companies will become more effective and better run, fostering greater supplier confidence and leading to a positive impact on the supply chains. In a supply chain that is trying to rid itself of an image of corruption, kickbacks and the lack of ethics, governance structures and transaction costs go a long way towards satisfying stakeholders' needs for transparency.

The issue of governance structures and ethical behaviour seems a challenge as far as public health centres/hospitals are concerned since the centres/hospitals can only source drugs and health supplies from other suppliers like Joint Medical Stores (JMS) only when a certificate of non availability is issued by national Medical Stores (NMS). Requisitions for drugs are submitted through the districts to NMS on a quarterly basis and funding is through the government credit line system. NMS which has a role of transporting drugs to districts and makes quarterly delivery schedules still suffers inefficiencies since some districts still travel all the way to Entebbe to collect their supplies because of delays in NMS transport system. It is also evident that as a result of unscrupulous behaviours of the officers stationed at the different stages of the supply chain, the shortages of drugs have continued to arise in Eastern Uganda (The New Vision, Thursday, January 29, 2009). This has found expression in the form of wrong information sharing so as to hoard the drugs and other supplies in favour of another health centres, influence peddling by district health officials to have their regions be favoured

for drugs supply and some of the drugs and supplies finding their way in drug shops and or clinics belonging to health officials. Interruptions in the supply chains results into shortages or non availability of critical health commodities in many health centres and public health sector programs. Reports on the expiry of drugs at National medical stores and various district health centres/hospitals has attracted a lot of public attention as why drugs should expire when some health centres/Hospitals in the Eastern Uganda are suffering shortages. As reported in The New Vision, Thursday, January 29, 2009 that the procurement of drugs from the National Medical Stores contributes a lot to the expiry of drugs and the health centres/hospitals are attracted to procure drugs with short-shelf life at reduced prices. In the same article Kamabare (2006) revealed that NMS spends UGX. 400m annually to store the expired drugs and UGX. 800m to destroy the rotten drugs. Madraa, (2006) recounts the existence of a very weak supply chain of essential medicines. It is against this background that the study seeks to examine the relationships between governance structures, ethical behavior, transaction costs and supply chain performance of essential medicines in Eastern Uganda.

1.2 Statement of the Problem

There has been rampant unavailability/shortage of essential medicines, delays in procurement and distribution services, poor storage and weak quality control systems, stock-outs and short shelf life /poor quality of drugs (The New Vision, Wednesday, November 19, 2008; The New Vision, Wednesday, December 10, 2008) which has affected the delivery of health services in the region. There were reports like the Auditor General's report(2008) coming out on the shortage of essential medicines like Anti-retroviral drugs (ARVs) in districts like Palisa, Kaberamaido and Soroti yet drugs were expiring in the stores. This could have been attributed

to the weak governance structures, unethical behavior and the increasing transactional costs in the supply chain of essential medicines in Eastern Uganda.

1.3 Purpose of the Study

The study sought to examine the relationship between governance structures, ethical behaviour, transaction costs and supply chain performance of essential medicines in Eastern Uganda and propose ways of addressing the current challenges of the supply chain.

1.4 Objectives of the Study

i) To examine the relationship between governance structures and supply chain performance of essential medicines.

ii) To establish the relationship between ethical behaviour and the supply chain performance of essential medicines.

iii) To establish the relationship between governance structures, transaction costs and the supply chain performance of essential medicines.

iv) To establish the relationship between ethical behaviour, transaction costs and the supply chain performance of essential medicines.

1.5 Research Questions

i) What is the relationship between governance structures and supply chain performance of essential medicines?

ii) What is the relationship between ethical behaviour and the supply chain performance of essential medicines?

iii) What is the relationship between governance structures, transaction costs and the supply chain performance of essential medicines?

iv) What is the relationship between ethical behaviour, transaction costs and the supply chain performance of essential medicines?

1.6 Scope of the Study

1.6.1 Area Scope

The study focused on the government health centres/hospitals in Eastern Uganda because this region has reported several cases of malaria, tuberculosis etc diseases that require essential medicines. Other factors were held constant during this study.

1.6.2 Subject Scope

The study focused on the relationships between governance structures, ethical behaviour, transaction costs and supply chain performance of essential medicine in Eastern Uganda.

1.7 Significance of the Study

i) The results of the study will help the key players in the supply chain of essential medicines in Uganda realize the effect of governance structures, ethical behaviour and transaction costs on the supply chain performance of essential medicine so as to develop the necessary strategies to strengthen supply chain performance of essential medicines in Eastern Uganda.

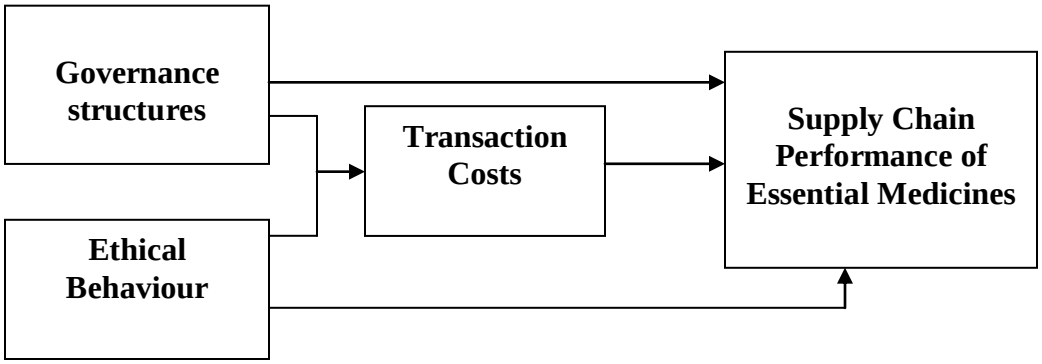
ii) From the findings indicated significant relationships between the study variables and supply chain performance of essential medicines. Thus the findings from the study will used for further reference by other academicians to understand better the relationships

between governance structures, ethical behaviour, transaction costs and supply chain performance.

iii) The policy makers such as the Ministry of Health and National Medical Stores will use the findings and recommendations of the study in the development and strengthening of the existing policies and regulations as regards the supply chain performance of essential medicines in Eastern Uganda and the rest of the country.

1.8 Conceptual Framework

Figure 1.1: Conceptual Framework



Developed from existing literature: *(Governance Structures, transaction costs & Supply Chain Performance)-Heide and John, 1992; Noordewier, John and Nevin, 1990; (Governance Structures & Supply Chain Performance)-Ferguson 2004; Kim 1998; Mighell, Jones1963; Barkema, Drabenstott1995; Hobbs 1996; Peterson, Wysocki 1997; Spiller et al. 2005; (Ethical Behaviour & Supply Chain Performance)-Mentzer et.al., (2001), Levy & Grewal, (2000).*

1.9 Description of the Model

The model shows the relationship between the variables under investigation/study. The independent variables are Governance structures and ethical behaviour, transaction costs as the intervening variable and the supply chain performance of essential medicines as the dependent variable. The model shows that Governance structures, ethical behaviour and transaction costs leads/results into improved supply chain of essential medicines.

1.10 Organisation of the study

Chapter one was the introduction to the study which included; background to the study, statement of the problem, purpose of the study, research objectives, research questions, scope of study, significance of the study, conceptual framework, and organisation of the study. Chapter two was a review of relational literature on the study variables.

Chapter three was the methodology of the study which included research design, survey population, and sampling design, and data collection, measurement of variables, data analysis and limitations of the study. Chapter four was presentation and interpretation of findings. Lastly was chapter five which consisted of the discussions, conclusions of major findings, recommendations and areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

An extensive review of the existing literature was done of the study variables (governance structures, ethical behaviour, transaction costs and supply chain performance) and the dependent variable to bring out the literature supporting the relationships in the suggested model for the research.

2.1 Governance Structures and Supply Chain Performance

A number of studies have been conducted on the supply chain governance structure types in the agribusiness literature, and these studies have distinguished between Spot Markets, Long-Term Relationships, Marketing Contract, Production Contracts, Contracts Farming and Vertical Integration in the supply chain continuum. Where Spot Market (SM) is used, goods are exchanged between multiple buyers and sellers at the current time period with price as the main determinant of the final transaction (Hobbs 1996). The other end of the supply chain continuum is the Vertical Integration (VI) which refers to a situation where products move between various stages of production, processing and distribution as a result of within the firm managerial orders rather than at the direction of prices. In between the two polar forms, there are the intermediate types of governance structures like the long-term relationships (L-TR), marketing contracts (MC), production contracts (PC) and contract farming (CF) (Spiller et al. 2005). In the long-term relationships, the exchange partners are independent of each other and are bonded by the long-term non-contractual relationships. The marketing contract represents an agreement by a buyer to provide a market for the seller's output. In this arrangement, the

seller transfers some risks and decision over when and how the product is to be sold to the buyer. The production contract exists where the buyer supplies and manages all the inputs on the farm and the farmer usually becomes just a supplier of the land and labour (Singh, 2000). Next to the production contract in the supply chain continuum, there is the contract farming which refers to the system of production and supply of products by farmers to the buyers under forward contracts. The essence of such arrangements is the commitment to provide a commodity of a type, at a specify time, price and in specified quantity to a known buyer (Singh 2000). In this case, the contract farming can be looked at as a half way between the independent farm production and the corporate farming.

2.2 Ethical Behaviour and the Supply Chain Performance

Supply Chain Management (SCM) used to be simple compared to what it is today (Levy and Grewal, 2000). More recently, a broader approach of SCM has been addressed in order to incorporate other business functions. For example, Mentzer et al. (2001) define supply chain management as a systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. The approach of supply chain management is derived from the fact that there are dependencies between levels in channels from the point-of-origin to the point-of-consumption (Lambert et al., 1998). Usually in supply chain management, the point-of-origin refers to suppliers or manufacturers (Carter et al., 1995), while the point-of-consumption refers to consumers, customers or end-users in a supply chain (Min and Mentzer, 2000). Bowersox and Closs (1996) define the channel construct as the structure of inter-company units and extra-company agents and dealers, wholesale and retail,

through which a commodity, product, or service is marketed. Dependence refers to there being a link, a tie, or a bond between one echelon in relation to another echelon or echelons in channels (Lambert et al., 1998; Håkansson and Snehota, 1995). Svensson (2002) divides the dependence between levels in channels into three principal categories (i.e. time-dependence, relational-dependence, and functional-dependence) and three sub-categories (uni-directional/bi-directional, direct/indirect and vertical/horizontal). Berenbeim (2000) cites three trends as evidence of the growing importance of ethics in business: the globalization of markets and the need for core values and principles that are universally applicable, the acceptance of these values and principles as part of the corporate governance as illustrated by increased participation of boards in their development and the improved ethical literacy of senior managers as illustrated by the increasing sophistication of the values and principles. There are various facets of business ethics (Svensson and Wood, 2004) – both internal and external. On the one hand, business ethics has an external emphasis. In particular, business ethics considers the gap between the EVP of corporate behavior/business operations and the marketplace's/society's perceptions of the EVP of corporate behavior/business operations. Corporate ethics, on the other hand, has an internal emphasis. In particular, corporate ethics considers the gap between the management's ethical behavior and the employees' perception of the management's ethical behavior in business operations. The role of ethics in supply chain management described in this article is limited to the external approach in the next section. Wood's (2002) partnership model also provides a partial foundation for a conceptual framework of ethics in supply chain management. His model consists of four levels of commitment to EVP, namely: ethical culture, to and from staff and shareholders, ethical organizational artifacts, and ethics in the marketplace. The partnership model stresses the importance of companies' commitment to EVP. This model and a pre-study have been used as

inspiration to outline different orientations of supply chain management-ethics. Supply chain management-ethics may be distinguished derived from the relationships of organizations, the industry, the marketplace and the society. They are based upon two components (i.e. union and connection), all of which applies to both upstream and downstream directions of corporate behavior and business operations. Supply chain management-ethics may be limited to understand the EVP of the supply chain from a short-term perspective and narrow approach. Long-term and broadened supply chain management-ethics requires the understanding of EVP in the marketplace and society (i.e. split-vision). Supply chain management -ethics requires vertical as well as horizontal corporate focus to be successful in the marketplace and society. Maintaining a kind of tunnel-vision of EVP may endanger corporate business performance, while a kind of split-vision of EVP may strengthen its opportunities to be successful in corporate behavior and business operations.

2.3 Ethical behaviour and Transaction Costs

The transaction cost theory judges the efficiency of the business transactions by production and transaction costs (Williamson, 1979). Ex ante transaction costs are, e.g., costs of information, negotiation and contracting. Business partners that adhere to a clear set of some of these costs or even abolish others. The more certain the business or transaction partners can be of each other's values and behaviour the lower the transaction costs (Wood's 2002) and thus, the more the supply chain members believe in the same values and adhere to the same fundamental ethical conditions, the lower the transaction costs (Svensson and Wood, 2004). It is the value led approach and the dogged determination to adhere to the core values that hold the key for the long term sustainable reputation of the corporate undertaking. In the words of Azim Premji, "Ethics is an asset, not a liability. It may increase transaction time but reduces the transaction

cost. Lack of ethics is an expense." Bottom line growth and the business ethics will coexist in the long run. Markets impose substantial costs on institutions and individuals that engage in unethical behavior, thus, market forces provide private incentives for ethical behavior (Berenbeim 2000)

2.4 Governance Structures, Transaction Costs and Supply Chain Performance

Transaction cost analysis (TCA) provides efficiency-based guidelines to determine which governance structure would be appropriate for which type of task, and tries to align a governance structure with transactions required for the performance of the task. Accordingly the governance structure utilized by a firm should be one that minimizes the sum of the cost of performing the task within the boundaries of the firm and the cost of managing the transaction if the task was performed outside of the firm's boundaries. Thus the transaction cost analysis recognizes that while transaction cost economizing is important, such economizing does not proceed regardless of production cost ramifications. It also notes that the analysis of transaction costs should be located within a larger economizing framework, and the resultant trade-offs between transaction and production costs should be considered (Williamson, 1985). Though Williamson recognizes this trade-off, his thesis, nonetheless, retains the primacy of transaction costs – the alignment of governance structure with transactions is done in a "mainly transaction-cost-economizing way" (Williamson, 1991). The consideration of transaction costs is primary when asset specificity is high, as is the case in most of Williamson's applications. Extending the primacy of transaction costs to marketing applications is problematic, however. There are several problems with the manner in which transaction cost analysis has been applied to guide marketing decisions. First, a number of applications (Heide and John, 1992; Noordewier, John and Nevin, 1990) utilize the firm as the unit of analysis, and conceive governance structures at too high a level of aggregation. While in some cases firms as a whole

might be integrated or deintegrated, most governance decisions are made at the functional level (e.g. research and development, distribution, advertising, etc.) because transaction and production costs are incurred at this level. The extent of integration within a firm can vary considerably from one task to another. For instance, the firm could integrate research and development and advertising, and deintegrate distribution. The second, and perhaps the more critical, problem pertains to the nature of asset specificity. When assets are highly specific, transaction costs become extremely high and transaction cost economizing becomes the dominant concern in designing governance structures. Real-world firms, however, need to produce and manage business functions that require assets whose specificity is low to moderate. High asset specificity, with zero salvage value, is an exception. Under moderate to low specificity antecedents other than transaction costs and production costs influence governance decisions. Here strategic concerns override efficiency (minimization of transaction or production costs) concerns in determining functional integration/ deintegration. Most applications of transaction cost analysis to marketing (Heide and John 1990, 1992; Noordewier et al., 1990) uphold the primacy of transaction costs as they speciously assume the extent and importance of asset specificity.

2.5 Transaction Costs and Supply Chain Management

Business people, academics who teach and study management and others interested in the operation of supply chains often express frustration with how few insights economics appears to provide them. Although it is not always obvious, the source of this frustration lies in the assumptions underlying the ruling neoclassical paradigm used in economic analysis. Most economic studies of markets, industries and firms use this theoretical approach. Central to neoclassical theory is the concept of a single product firm, operating in a perfectly competitive

industry with a large number of competitor firms all producing the same product under the same cost conditions and all facing the same market demand curve. (Of course, neoclassical theory has been successfully extended to cover monopolies and, with less success, to other intermediate forms of industrial organization such as monopolistic competition and oligopoly.) The standard neoclassical transaction involves the exchange of a homogeneous product – there are no quality variations between products and consequently no costs involved in measuring the value of a product. Where products do exhibit quality differences, they are regarded as distinct products serving separate markets. Economic agents are assumed to possess perfect information, hence, there is no uncertainty regarding prices, product characteristics, or the behaviour of competitors and trading partners. The neoclassical transaction occurs in the current time period between multiple buyers and sellers, thereby ruling out the possibility that one firm could exercise market power over others since many alternative buyers and sellers exist. Neoclassical economic analysis concentrates on equilibrium market outcomes. There is no consideration of how business relationships arise. Instead, transactions are treated as though they occur in a frictionless economic environment, somewhat analogous to the physicist's perfect vacuum. Somewhat ironically, the neoclassical theory of the firm has little to say about the firm; it does not provide a rationale for the existence of firms, an explanation of the growth of firms or an analysis of the internal organization of firms (Cheung, 1992). The firm is instead treated as a black box, a featureless production function which turns inputs into outputs; as such it is a component of the neoclassical explanation of the workings of a competitive economy, but one which is little understood. When one strips neoclassical theory down to its key assumptions, it is not surprising that analysis undertaken using its framework provides few, if any, insights for those interested in supply chain management.

Coase, (1937) identified some limitations to the neoclassical paradigm for understanding relationships between firms. These ideas later became the foundation for new institutional economics. Coase argued that in order to understand what a firm does, one must first understand why a firm exists and, therefore, what forces govern the organization of economic activity. Unlike standard neoclassical economics, the Coasian approach recognized that there are costs to using the market mechanism. These include the costs of discovering what prices should be, the costs of negotiating individual contracts for each exchange transaction and the costs of accurately specifying the details of a transaction in a long-term contract. These costs were later termed "transaction costs". The costs of using the market can be avoided if a firm becomes vertically integrated and assumes the burden of co-ordinating economic activity internally through within-firm managerial direction. However, this means that a firm must assume the alternative costs of administering vertical flows of products and organizing factors of production. Provided that a firm can carry out these activities internally at a lower cost than would be the case if the transaction were co-ordinated through an open market, then one would expect, all other things being equal, the organization of economic activities to be carried out by a vertically integrated firm. Coase argued that: …a firm will tend to expand until the costs of organising an extra transaction within the firm become equal to the costs of carrying out the same transaction by means of exchange on the open market or the costs of organising in another firm(Coase, 1937). Hence, he provided a rationale for the existence of the firm which was based on the costs of carrying out a transaction. These insights, however, did not have a major impact on economic thought until more than 35 years later. In the Cheung, (1992) interest in transaction costs increased. Pioneering work in the development of a theory of transaction costs was carried out by Williamson, (1975). Gradually, a body of theories based on the concept of transaction costs emerged; these include the transaction cost economics of

Williamson, (1975), the property rights school, agency theory, the economics of the multinational enterprise and a transaction cost approach to economic history. Although focusing on separate economic problems, these approaches all have their roots in the original ideas of (Coase, 1937) and use the concept of transaction costs to explain the organization of firms and the way in which they interact along a supply chain.

2.6 Summary of the Chapter

The chapter has dealt extensively with the review of the related literature on the study variables and their relationships among themselves and the dependent variable; supply chain performance hence providing for the requirement of developing a methodology (chapter three) to establish the samples required to re-present the entire population.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discussed the practical procedures for carrying out this study. It gave details of the research design to be adopted, nature of sample, sampling procedure, data collection procedures and the final data analysis techniques that were applied. It gave the framework within which data was collected and analyzed.

3.2 Research Design

The study took the form of a quantitative cross sectional survey design using a correlation approach to establish the strength and direction of relationships between transaction costs, governance structures, ethical behaviour and supply chain performance of essential medicines in Eastern Uganda.

3.3 Study Population

Eastern Uganda has a total of 22 districts namely; Jinja,Kamuli, Iganga, Mayuge, Namutumba,Kaliro,Bugiri,Busia,Tororo,Butalegya,Sironko,Kapchorwa,Bukwo,Busia,Mbale, Bududa, Manafwa, Budaka, Pallisa, Kumi, Soroti and Kaberamaido. (Uganda Bureau of statistics report 2008). According to the Ministry of Health Staffing Guidelines (2008), each district is expected to have at least 1 District Secretary for Health, 1 District Health Officer, 1 District Nursing Officer, 1 District Health Educator, 1 District Health Inspector, 1 District

Assistant Drug Inspector, 6 Dispensers and 20 nurses. This therefore makes a population of 484 respondents for the health centre/hospital officials for the 22 districts in Eastern Uganda.

For the patients a population size of 5 patients per district thus a total of 110 patients, 5 NMS officers and 5 representatives of the manufacturers of essential medicines were considered appropriate according to Roscoe's rule of thumb. The study comprised of the patients, health centre IVs/hospital officials, NMS officers and finally representatives of manufacturers of essential medicines from Kampala Pharmaceutical Industries and Quality Chemicals. These respondents were considered important because they are critical as far as the supply chain performance of essential medicines is concerned.

The Unit of Analysis for the study was thus an entity.

3.4 Sample of the Study

The sample size for the health officers was 214 respondents, 86 respondents for the patients and 10 respondents from the manufacturers/NMS officers selected basing on a table for determining sample size by Krejcie & Morgan, (1970).

Table 3.1: Sample Size

Category	Population	Sample
Total for heath centre/hospital officials	484	214
Patients	110	86
Manufacturers/NMS officers	10	10
Total number of respondents	**604**	**310**

Source: Uganda Demographic Health Survey, 2008

3.5 Sampling Method

For the health officers stratified proportionate sampling was used to select the respondents from each stratum. For the patients, NMS officers and manufacturers' representatives purposive sampling was used to select respondents who are willing and understand English. Purposive sampling was used during sample selection bearing in mind the objectives of the study which were based on the purpose of the study.

3.6 Data Sources

3.6.1 Primary Data:

Primary data was obtained through the use of research-administered questionnaires to respondents following systematic and established academic procedures as suggested by (Churchill, 1979; Garbing and Anderson, 1988; Nunnally and Bernstein, 1994).

3.7 Data Collection Instruments

Data from the field was obtained by use of research- administered to the respondents. The questionnaires were validated and pre-tested. The interview method was used to ensure high response rates as well as allowing for clarification of possible ambiguities related to questions asked (Churchill, 1995).

3.8 Validity and Reliability of Research Instrument

Validity of the instrument was measured using the Content Validity Index. Reliability of the instrument was tested using the Cronbach Alpha Coefficient. According to Cronbach (1951) a coefficient of 0.5 and above is considered reliable. The Cronbach Alpha Coefficients of the variables were all above 0.5 as shown in the table below:-

Table 3.2 Validity and Reliability

Variable	Anchor	Cronbach Alpha Value (a)
Governance Structures	5 point	.6650
Ethical Behaviour	5 point	.7858
Transaction Cost	5 point	.8299
Supply Chain Performance	5 point	.6243

Source: Primary Data

The table above displays the reliability coefficients for all constructs used in the study. All alpha reliabilities (α) for all scales were above 0.6, ranging from .6243 to .8299 therefore meeting acceptance standards for research (Nunnally, 1978).

3.9 Measurement of variables

Scales from previous studies were used to measure the study variables.

ii) Supply Chain Performance: The scales for supply chain performance developed by Croom et. al., (2000) were adopted and used to measure supply chain performance. A 5 point Linkert scales ranging from 5-strongly disagree to 1-strongly agree was used. Measures included fill rate, on-time deliveries and stock outs.

iii) Ethical Behaviour: The scales for ethical behaviour developed by Muncy and Vintell, (1992) was adopted and used to measure ethical behaviour. A 5 point Linkert scales ranging from 5-strongly disagree to 1-strongly agree was used. Measures included business practices, relativism and idealism.

iv) Transaction Costs: Transaction costs were measured basing on the work of several authors but the scales used by Noordeweir, *et.al.,* (1990) to measure the dimensions of

transaction costs thus; behavioural uncertainty, opportunism, asset specificity were adopted for the study and responses anchored on a 5 point Linkert scale ranging from 5-strongly disagree to 1-strongly agree.

v) **Governance Structures:** The scales for governance structures developed by Murray (2003) were adopted and used to measure governance structures thus legal safeguards and private ordering were used in the study and responses anchored on a 5 point Linkert scale ranging from 5-strongly disagree to 1-strongly agree.

3.10 Data Analysis

Data from the field was compiled, sorted, edited and coded to ensure the Statistical Package for Social Sciences (SPSS v. 16.0) software for analysis. The data was cleaned and analyzed according to the research questions. Cross tabulations, factor analysis and correlation tests were used to describe the sample characteristics and the objectives of the study. Pearson's Correlation was used to test the nature of the relationships between the variables and regression analysis was used to determine the variance in the dependent variable that is explained by the independent variables.

CHAPTER FOUR

RESULTS AND FINDINGS OF THE SURVEY

4.1 Introduction

This chapter comprises of a presentation of results and their interpretation. The presentation in this chapter details the results as tested according to the objectives of the study. The beginning section of the chapter starts off with the descriptive statistics which featured mainly item means and clustered pie charts. The descriptives for the items in the instrument were also presented using frequencies for each item to define the relative opinion of the respondents for that particular item. The presentation of this chapter was guided by the following research objectives;-

i) To examine the relationship between governance structures and supply chain performance of essential medicines.

ii) To establish the relationship between ethical behaviour and the supply chain performance of essential medicines.

iii) To establish the relationship between governance structures, transaction costs and the supply chain performance of essential medicines.

iv) To establish the relationship between ethical behaviour, transaction costs and the supply chain performance of essential medicines.

4.2 Sample Characteristics

Means were generated to present the results for the sample characteristics. The means were used to indicate variations of respondents based on level of education, period taken to receive essential medicines, number of employees working in organization, customers/Patients attended to daily and period of existence of organisation.

Table 4.1: Means for Sample Characteristics

Sample Characteristics	Manufacturers & National Medical Stores	Patients	Health Centres/Hospitals
Level of education	5.38	3.93	4.02
Period taken to receive essential medicines			3.00
Number of employees working in organization	3.17		3.56
Customers/Patients attended to daily	2.73		3.41
Period of existence of organisation	3.00	2.96	2.88

Sample characteristics averages were generated for the sample characteristics that affected the supply chain of essential medicines. According to the level of education, the responses from Manufacturers & National Medical Stores revealed that the average level of education in these organisations was a bachelors degree (Mean=5.38). Results form the health centres/hospitals and patients revealed that the average level of education for staff and patients was at diploma level (Mean=4.02) and (Mean=3.93) respectively.

For the period taken to receive essential medicines, the results revealed that it took 1-2 months for the health centres/hospitals to receive essential medicines (Mean=3.00). Findings about the number of employees working in the organization, the Manufacturers & National Medical Stores revealed that there were over 50 employees in their organizations (Mean=3.17) whereas for the health centres/hospitals, 31-50 staff were employed at the health centres/hospitals (Mean=3.56). For the patients attended to daily, the health centres/hospitals revealed that 31-50

patients were attended to daily (Mean=3.41) and this was the same for the Manufacturers & National Medical Stores they (Mean=2.73). For the findings about period of existence of organization, the all the respondents in their different categories revealed that their organizations had been in existence for a period of 10-25 years.

Table 4.2: Means for Health Centres/Hospitals' Responses on Study Variables

Variable	Min	Max	Mean	Std. Deviation
Governance Structures	1	5	3.71	0.32
Ethical Behaviour	1	5	3.30	0.31
Transaction Costs	1	5	3.11	0.66
Supply Chain Performance	1	5	3.69	0.62

Global means for health centres/hospitals responses on the different variables were generated and for governance structures, the health workers agreed to the existence of governance structures at the health centres/hospitals (Mean=3.71). For ethical behaviour, the health centres/hospitals were uncertain as to whether or not there was ethical conduct at the centres/hospitals (Mean=3.30) and this was the same for transactions costs (Mean=3.11). For supply chain performance, the health centres/hospitals revealed that the supply chain of essential medicines was efficient and effective (Mean=3.69).

Table 4.3: Means for Manufacturers & National Medical Stores' Responses on Study Variables

Variable	Min	Max	Mean	Std. Deviation
Governance Structures	1	5	3.15	0.39
Ethical Behaviour	1	5	3.52	0.60
Transaction Costs	1	5	3.56	0.52
Supply Chain Performance	1	5	3.42	0.44

Global means of the manufacturers & National Medical Stores responses on the different variables were generated, for governance structures, the manufacturers & National Medical Stores were not sure as to whether there were proper governance structures in their organisations (Mean=3.15). For ethical behaviour, the manufacturers & National Medical Stores agreed to the fact that there was ethical behaviour in their organizations (Mean=3.52) whereas for transactions costs, they revealed that there was existence of transaction costs in their organization in the supply chain of essential medicines (Mean=3.56). For supply chain performance, they were unsure as whether the supply chain of essential medicines was efficient and effective (Mean=3.42).

Table 4.4: Means for Patients' Responses on Supply Chain Performance

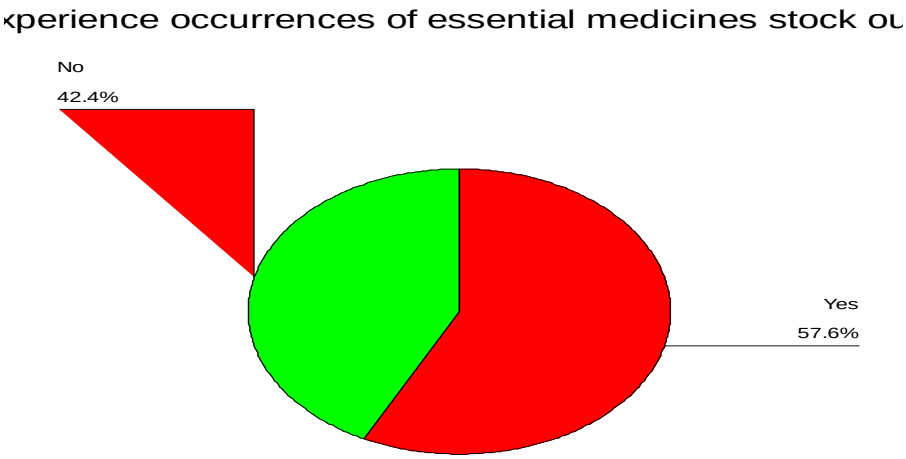
Patients	Min	Max	Mean	Std. Deviation
Supply Chain Performance	1	5	3.24	0.61

Table 4.4 above shows an average for the item means of patients' responses on supply chain performance which were generated and revealed that the patients were unsure about the performance of the supply chain for essential medicines at the health centres/hospitals (Mean=3.24).

4.2.1 Experience Occurrences of Essential Medicines Stock Outs/expiry

The results in the pie chart below present the distribution of the occurrences of essential medicines stock outs/expiry.

Fig 4.1: Experience occurrences of essential medicines stock outs/expiry



Source: Primary Data

Figure 4.1 shows that 57.6% of the respondents revealed that they experienced occurrences of essential medicines stock outs/expiry whereas 42.4% revealed that they did not.

4.3 Pearson's Correlation Coefficients of the Study Variables

4.3.1 Pearson's Correlation Matrix

The Pearson correlation coefficient (r) was employed to establish the relationship between governance structures, ethical behaviour, transaction costs and supply chain performance of essential medicines. The results are tabulated in table 4.5 below followed by their interpretation.

Table 4.5: Pearson Correlation Matrix

	1	2	3	4
Governance Structures-1	1			
Ethical Behaviour-2	.236**	1		
Transaction Costs-3	-.012	-.107	1	
Supply Chain Performance-4	.309**	.327**	-.404**	1
** Correlation is significant at the 0.01 level (2-tailed).				
* Correlation is significant at the 0.05 level (2-tailed).				

i) The relationship between governance structures and supply chain performance

From table 4.5 above, correlation results indicated a significant and positive relationship between governance structures and supply chain performance ($r = .309^{**}$, $p<.01$). This means that the more effective and efficient the governance structures are, the greater the level of supply chain performance of essential medicines.

iv) The relationship between ethical behaviour and the supply chain performance

From table 4.5 above, correlation results indicated a significant and positive relationship between ethical behaviour and supply chain performance ($r = .327^{**}$, $p<.01$). This means that the higher the level of ethical behaviour the higher the level of supply chain performance of essential medicines.

v) The relationship between governance structures, transaction costs and the supply chain performance.

The relationship between governance structures and transaction costs was found to be negative ($r = -0.012$, $p<.01$). The relationship between transaction costs and supply chain performance was also negative ($r = -0.404^{**}$, $p<.01$). This means that as governance

structures improve, the transaction costs reduce, then as the transaction costs reduce supply chain performance improves.

vi) The relationship between ethical behaviour, transaction costs and the supply chain performance.

A negative correlation was observed between ethical behaviour and transaction costs (r = -.107, p<.01), whereas the relationship between transaction costs and supply chain performance was a negative significant relationship (r = -0.404**, p<.01). This means that as ethical behaviour improves, transaction costs reduce.

4.4 Multiple Regression Analysis

Regression analysis was used to determine the extent to which governance structures, ethical behaviour and transaction costs can explain supply chain performance of essential medicines. The stepwise method was used during regression. The results obtained are shown by table 4.11 below:

Table 4.6: Regression Analysis

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Dependent Variable: Supply Chain Performance	
(Constant)	2.656	.232		11.427	.000	R Square	.304
Governance Structures	.269	.070	.251	3.847	.000	Adjusted R Square	.292
Ethical Behaviour	.105	.030	.227	3.463	.001		
Transaction Costs	-.166	.028	-.377	-5.911	.000		

Source: Primary Data

Results show that governance structures, ethical behaviour and transaction costs predict up to 29.2% of the supply chain performance of essential medicines (Adjusted R Square = 0.292, $p<0.00$). Also, the results revealed that governance structures, ethical behaviour and transaction costs were significant predictors of the supply chain performance of essential medicines (ß=0.251, $p<0.000$), (ß=0.227, $p<0.001$) and (ß=0.-377, $p<0.000$) respectively.

4.5 Summary of the Chapter

Chapter four has presented findings on sample characteristics, relationships between the study variables and regression analysis. This chapter revealed that there were significant correlations between all the study variables. The regression model has shown 29.2% of the variance in supply chain performance. The next chapter discusses the observed findings and provides recommendations.

CHAPTER FIVE:

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction:

In this chapter, a discussion of research findings is presented. Conclusions are drawn and recommendations made. The discussions, conclusions and recommendations were made in accordance with the research objectives. Answers to these objectives were from primary data from the staff and health centres/hospitals patients in Eastern Uganda plus NMS officers and representatives of the manufacturers of essential medicines.

5.2 Discussion of Findings

This section discusses the research findings in relation to the research questions below:

i) What is the relationship between governance structures and supply chain performance of essential medicines?

ii) What is the relationship between ethical behaviour and the supply chain performance of essential medicines?

iii) What is the relationship between governance structures, transaction costs and the supply chain performance of essential medicines?

iv) What is the relationship between ethical behaviour, transaction costs and the supply chain performance of essential medicines?

5.3 The relationship between governance structures and supply chain performance of essential medicines

Findings from the study revealed that there was a significant correlation between governance structures and supply chain performance. This revealed that when there is a high level of governance structures towards the distribution of essential medicines there was likely to be efficiency in the supply chain performance. The existing literature indicates that a number of studies have been conducted on the supply chain governance structure types in the agribusiness literature, and these studies have distinguished between spot markets, long-term relationships, marketing contract, production contracts, contract farming and vertical integration in the supply chain continuum. Where spot market (SM) is used, goods are exchanged between multiple buyers and sellers at the current time period with price as the main determinant of the final transaction (Hobbs 1996). The other end of the supply chain continuum is the vertical integration (VI) which refers to a situation where products move between various stages of production, processing and distribution as a result of within the firm managerial orders rather than at the direction of prices. In between the two polar forms, there are the intermediate types of governance structures like the long-term relationships (L-TR), marketing contracts (MC), production contracts (PC) and contract farming (CF) (Spiller et al. 2005). In the long-term realtionships, the exchange partners are independent of each other and are bonded by the long-term non-contractual relationships. The marketing contract represents an agreement by a buyer to provide a market for the seller's output. In this arrangement, the seller transfers some risks and decision over when and how the product is to be sold to the buyer. The production contract exists where the buyer supplies and manages all the inputs on the farm and the farmer usually becomes just a supplier of the land and labour (Singh, 2000). Next to the production contract in the supply chain continuum, there is the contract farming which refers to the system of

production and supply of products by farmers to the buyers under forward contracts. The essence of such arrangements is the commitment to provide a commodity of a type, at a specify time, price and in specified quantity to a known buyer (Singh 2000). In this case, the CF can be looked at as a half way between the independent farm production and the corporate farming.

5.4 The relationship between ethical behaviour and the supply chain performance of essential medicines

The correlation results revealed a significant and positive relationship between ethical behaviour and supply chain performance which implied that a high level of ethical behaviour towards the distribution of essential medicines would contribute greatly to inefficiencies in the supply chain of essential medicines. This is in agreement with the work of Berenbeim (2000) who cites three trends as evidence of the growing importance of ethics in business: the globalization of markets and the need for core values and principles that are universally applicable, the acceptance of these values and principles as part of the corporate governance as illustrated by increased participation of boards in their development and the improved ethical literacy of senior managers . They emphasize that business ethics considers the gap between the corporate behavior/business operations and the marketplace's/society's perceptions of corporate behavior/business operations. The existence of this relationship is probably because in most cases the fill rate, timely deliveries and stock outs in the supply chain will greatly depend on the ethical behaviour of the stakeholders so as to achieve efficiency. The results on the relationship between ethical behaviour and supply chain performance of essential medicines revealed that, when the medicines are used to benefit particular groups of individuals thus used for personal gain and there was no ethical dealing with co-workers, this would greatly jeopardise the performance of the supply chain for essential medicines in the

region. This is emphasised by Wood (2002) who believes that ethics is based on two components (i.e. union and connection), all of which applies to both upstream and downstream directions of corporate behavior and business operations.

5.5 The relationship between governance structures, transaction costs and the supply chain performance of essential medicines

From the findings the relationship between governance structures and transaction costs was found to be negative. The relationship between transaction costs and supply chain performance was also negative. This is in agreement with the Transaction cost analysis (TCA) which provides efficiency-based guidelines to determine which governance structure would be appropriate for which type of task, and tries to align a governance structure with transactions required for the performance of the task. Accordingly the governance structure utilized by a firm should be one that minimizes the sum of the cost of performing the task within the boundaries of the firm and the cost of managing the transaction if the task was performed outside of the firm's boundaries. Thus Transaction cost analysis recognizes that while transaction cost economizing is important, such economizing does not proceed regardless of production cost ramifications. It also notes that the analysis of transaction costs should be located within a larger economizing framework, and the resultant trade-offs between transaction and production costs should be considered (Williamson, 1985). Though Williamson recognizes this trade-off, his thesis, nonetheless, retains the primacy of transaction costs – the alignment of governance structure with transactions is done in a "mainly transaction-cost-economizing way" (Williamson, 1991). The consideration of transaction costs is primary when asset specificity is high, as is the case in most of Williamson's applications. Extending the primacy of transaction costs to marketing applications is problematic, however. There are

several problems with the manner in which Transaction cost analysis has been applied to guide marketing decisions. First, a number of applications (Heide and John, 1992; Noordewier, John and Nevin, 1990) utilize the firm as the unit of analysis, and conceive governance structures at too high a level of aggregation. While in some cases firms as a whole might be integrated or deintegrated, most governance decisions are made at the functional level (e.g. research and development, distribution, advertising, etc.) because transaction and production costs are incurred at this level. The extent of integration within a firm can vary considerably from one task to another. For instance, the firm could integrate research and development, advertising, and deintegrate distribution. The second, and perhaps the more critical, problem pertains to the nature of asset specificity. When assets are highly specific, transaction costs become extremely high and transaction cost economizing becomes the dominant concern in designing governance structures. Real-world firms, however, need to produce and manage business functions that require assets whose specificity is low to moderate. High asset specificity, with zero salvage value, is an exception. Under moderate to low specificity antecedents other than transaction costs and production costs influence governance decisions. Here strategic concerns override efficiency (minimization of transaction or production costs) concerns in determining functional integration/ deintegration. Most applications of Transaction cost analysis to marketing (Heide and John 1990, 1992; Noordewier et al., 1990) uphold the primacy of transaction costs as they speciously assume the extent and importance of asset specificity.

5.6 The relationship between ethical behaviour, transaction costs and the supply chain performance of essential medicines

It was also evident that there was a negative correlation between ethical behaviour and transaction costs. The relationship between transaction costs and supply chain performance

was also negative. The existing literature posts that the more certain the business or transaction partners can be of each other's values and behaviour the lower the transaction costs (Wood's 2002) and thus, the more the supply chain members believe in the same values and adhere to the same fundamental ethical conditions, the lower the transaction costs (Svensson and Wood, 2004). This in line with the work of Berenbeim (2000) who posts that unethical behaviour might increase transaction time but reduces the transaction cost. Lack of ethics is an expense." Bottom line growth and the business ethics will coexist in the long run.

Unlike standard neoclassical economics, the Coasian approach recognized that there are costs to using the market mechanism. These include the costs of discovering what prices should be, the costs of negotiating individual contracts for each exchange transaction and the costs of accurately specifying the details of a transaction in a long-term contract. The costs of using the market can be avoided if a firm becomes vertically integrated and assumes the burden of coordinating economic activity internally through within-firm managerial direction. However, this means that a firm must assume the alternative costs of administering vertical flows of products and organizing factors of production. Provided that a firm can carry out these activities internally at a lower cost than would be the case if the transaction were coordinated through an open market, then one would expect, all other things being equal, the organization of economic activities to be carried out by a vertically integrated firm.

Coase(1937) argued that firm will tend to expand until the costs of organising an extra transaction within the firm become equal to the costs of carrying out the same transaction by means of exchange on the open market or the costs of organising in another firm (Coase, 1937). Hence, he provided a rationale for the existence of the firm which was based on the costs of carrying out a transaction. Pioneering work in the development of a theory of

transaction costs was carried out by Williamson, (1975). Although focusing on separate economic problems, these approaches all have their roots in the original ideas of Coase (1937) and use the concept of transaction costs to explain the organization of firms and the way in which they interact along a supply chain.

5.7 Conclusion

The study set out to examine the relationship between governance structures, ethical behaviour, and transaction costs and supply chain performance of essential medicines in Eastern Uganda. In particular, the study examined relationships between the study variables; governance structures, ethical behaviour, transaction costs and supply chain performance. All the relationships were significant. The study also examined the effect of the study variables on the dependent variable; all independent variables were found to be significant predictors of supply chain performance. Ethical behaviour and transaction costs were the most significant predictors. The independent variables accounted for only 29.2% of the variance in supply chain performance.

5.8 Recommendations

After considering the results of this study, recommendations are suggested that should provide more information to medical officers and managers on how to improve and maintain the supply chains of essential medicines.

i) Governance structures, ethical behaviour and transaction costs predicted 29.2% of the variance in supply chain performance of essential medicines in eastern Uganda. The researcher recommends that a study be carried out comprising of other factors which were

not part of the model to try and predict supply chain performance as this could increase the variance in the supply chain performance of essential medicines in Uganda.

ii) The supply chain partners and policy makers of essential medicines should put in place systems to enhance ethical behaviours and governance structures while reducing transaction costs since they were found to be significant predictors of supply chain performance of essential medicines. The key players in the supply chain of essential medicines should put more emphasis on ensuring that staff emit desired work ethics, systems that ensure adherence to set policies and procedures and endeavour to eliminate behavioural uncertainty and opportunism.

iii) The health centre/hospital officials, NMS officers and manufacturers of essential medicines should undertake a deliberate policy to always interact with the patients to be able to understand how they perceive the performance of the supply chain of essential medicines as far as refill rate, stock outs and on-time delivery of essential medicines were concerned. This will help identify the gaps in the supply chain of essential medicines and make effort to close the gaps as a means of enhancing effectiveness and efficiency of the supply chain of essential medicines.

5.9 Areas for Further Research

The results of the study point to a number of opportunities for further research into governance structures, ethical behaviour, transaction costs and supply chain performance. These include but not limited to the following:

i) A critical review of the literature shows an association between trust, retention, image and networking, which were not part of this study. Further studies would benefit from including the above components.

ii) The model could only explain 29.2% in variance of the supply chain performance of essential medicines in Uganda, the researcher recommends that a study be carried out comprising of other variables such as commitment, trust, relationship quality which were not part of the model to try and predict supply chain performance of essential medicines in Uganda.

iii) To study the true nature of governance structures, ethical behaviour and transaction costs, a longitudinal study is more appropriate.

5.10 Limitations of the study

i) According to the population, the study required selecting a sample which could have excluded some of the respondents with vital information. Through purposive sampling, the researcher took care of such respondents not to be excluded during data collection.

ii) The questionnaire design might have limited additional responses. This was mitigated through prompting the respondents to provide additional information.

iii) The health centre/hospital officials, representatives of manufacturers and NMS officers were fearful in providing confidential information for the organizations they work for. Here the researcher assured the respondents that the information provided was for only academic purposes by presenting the letter from the Graduate and Research Centre. Some of the respondents remained sceptical to provide the required information which affected the final results of the study.

iv) The scales in the questionnaire were adopted from other studies conducted in different environments from that of Uganda, which caused bias among the respondents. The researcher engaged experts in the fields of transaction costs, governance structures,

ethical behaviour and supply chain performance to moderate the scales adapted to fit the Ugandan setting.

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APPENDIX I

HEALTH CENTRES/HOSPITAL OFFICIALS QUESTIONNAIRE

Dear Respondent,
This questionnaire seeks to establish the relationship between **Governance Structures, Ethical Behaviour and Supply Chain Performance of Essential Medicine in Eastern Uganda.** You have been selected to participate in this study because we believe you will provide the information we need. The information you provide will be used for purely academic purposes and will be treated with utmost confidentiality.

Thank you for your time and cooperation

SECTION I: GENERAL INFORMATION

Please tick the appropriate response for the questions below:

Demographic Characteristics

1. What is the name of your Health Centre/Hospital (optional):
   ……

2. How long does it take your Health Centre/Hospital to receive essential medicines from National Medical Stores

Code	**1**	**2**	**3**	**4**
Duration	Less than a week	1-4 weeks	1-2 months	Over 3 months
Tick				

3. Do you experience occurrences of essential medicines stock outs/expiry?

Code	**1**	**2**
	Yes	No
Tick		

4. Level of Education

Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Level	No Education	Primary	Secondary	Diploma	Bachelors degree	Masters	PhD
Tick							

5. For how long has the Health Centre/Hospital been in existence?

Code	**1**	**2**	**3**	**4**
Duration	0-5yrs	5-10 yrs	10-25 yrs	Over 25 yrs
Tick				

6. How many employees are working in your Health Centre/Hospital?

Code	**1**	**2**	**3**	**4**	**5**
No.	Less than 10	11-30	31-50	Over 50	Not sure
Tick					

7. How many patients does your Health Centre/Hospital attend to daily?

Code	**1**	**2**	**3**	**4**	**5**
No.	Less than 10	11-30	31-50	Over 50	Not sure
Tick					

Please indicate by ticking in the appropriate box to the extent to which you agree with the statement below:

SECTION II: GOVERNANCE STRUCTURES

	Legal safeguards	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	The contract forms the core of our relationship with patients	1	2	3	4	5
2	It is not so important in our relationships with patients and NMS to have a good contract	1	2	3	4	5
3	The risk in the relationships with our patients is sufficiently covered by contractual and non-contractual means	1	2	3	4	5
4	Actually, we cannot afford a break with our patients	1	2	3	4	5
5	The contract with the patients is as complete as possible					
6	Because we have been doing business so long with our patients, all kinds of procedures have become self-evident	1	2	3	4	5
7	Because we have been doing business so long with our patients, we can understand each other well and quickly	1	2	3	4	5
8	Our patients can not afford a break with us	1	2	3	4	5
9	If the relationship with our centre/hospital is broken, the patients will have trouble finding a comparable centre/hospital	1	2	3	4	5
10	We know much more about the patients than they know about us	1	2	3	4	5
11	Our patients are more dependant on us than we are on them	1	2	3	4	5
12	In our relationships with our patients, it is assumed that contracts will in general be renewed	1	2	3	4	5
13	For the foreseeable future we do not expect a break with our patients	1	2	3	4	5
14	If the relationship with our patients break, it will take us much effort to fill the gap in turnover	1	2	3	4	5
	Private ordering					
1	The patient shares in the payment for the investments in specific tools and/or measurement apparatus that we must make for the production of the essential medicines	1	2	3	4	5
2	The centre/hospital is given guarantees for supply for an agreed period of time	1	2	3	4	5
3	The location of our centre/hospital plays an important role in the relation with our patients	1	2	3	4	5
4	There is restriction of room for opportunism alter in our centre/hospital	1	2	3	4	5
5	We provide an important source of information on essential medicines for our patients	1	2	3	4	5
6	The relationship between our centre/hospital and our patients has continuously improved in the course of time	1	2	3	4	5
7	Our service to our patients has improved strongly in the course of time	1	2	3	4	5
8	The patient shares in the payment for specific machines and apparatus that we must use for	1	2	3	4	5

	the supply of the essential medicines					
9	If our patients do not behave fairly, they could seriously damage their reputation in the market	1	2	3	4	5

SECTION III: ETHICAL BEHAVIOUR

	Business Practices	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	I call in sick in order to take a day off	**1**	**2**	**3**	**4**	**5**
2	I report a co-worker's violation of the organisations' policies and guidelines	**1**	**2**	**3**	**4**	**5**
3	I do not divulge confidential information to parties external to the organisation	**1**	**2**	**3**	**4**	**5**
4	I takethe necessary time to do a job	**1**	**2**	**3**	**4**	**5**
5	I do not take extra personal time during lunch hour, break and early departures	**1**	**2**	**3**	**4**	**5**
6	Falsifying time/quality/quantity reports	**1**	**2**	**3**	**4**	**5**
7	I do not authorize subordinates to violate the organisation's policies and guidelines	**1**	**2**	**3**	**4**	**5**
8	I do not falsify internal time/quality/quantity reports for the organisation	**1**	**2**	**3**	**4**	**5**
9	I do not pass blame for errors to an innocent co-worker	**1**	**2**	**3**	**4**	**5**
10	I do not claim credit for peers' work	**1**	**2**	**3**	**4**	**5**
11	I give gifts/favors in exchange for preferential treatment	**1**	**2**	**3**	**4**	**5**
12	I accept gifts/favors in exchange for preferential treatment	**1**	**2**	**3**	**4**	**5**
13	I overstate expense accounts by more than 10% of the correct amount	**1**	**2**	**3**	**4**	**5**
14	I use the organisational services for personal use	**1**	**2**	**3**	**4**	**5**
15	I remove the organisations' supplies for personal use	**1**	**2**	**3**	**4**	**5**
16	I use the organisation time for personal business	1	2	3	4	5
	Relativism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	There are no ethical principles that are so important that they should be part of any code of ethics.	1	2	3	4	5
2	What is ethical varies from one situation and organisation to another.	1	2	3	4	5
3	Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.	1	2	3	4	5
4	Different types of moralities cannot be compared as to "rightness".	1	2	3	4	5
5	What is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.	1	2	3	4	5
6	Moral standards are simply personal rules which indicate how a person should behave, and are not to be applied in making judgments of others.	1	2	3	4	5
7	Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.	1	2	3	4	5
8	Rigidly codifying an ethical position that prevents certain types of actions stand in the way of better human relations and adjustment.	1	2	3	4	5
9	No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends upon the situation.	1	2	3	4	5
10	Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.	1	2	3	4	5

	Idealism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	An organisation should make certain that its actions never intentionally harm another even to a small degree.	1	2	3	4	5
2	Risks to another should never be tolerated, irrespective of how small the risks might be.	1	2	3	4	5
3	The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.	1	2	3	4	5
4	One should never psychologically or physically harm another person.	1	2	3	4	5
5	One should not perform an action which might in any way threaten the dignity and welfare of another individual.	1	2	3	4	5
6	If an action could harm an innocent other, then it should not be done.	1	2	3	4	5
7	Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences of the act is immoral.	1	2	3	4	5
8	The dignity and welfare of people should be the most important concern in any organisation.	1	2	3	4	5
9	It is never necessary to sacrifice the welfare of others.	1	2	3	4	5
10	Moral actions are those which closely match ideals of the most "perfect" action.	1	2	3	4	5

SECTION IV: TRANSACTION COSTS

	Opportunism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	Our Health Centre/Hospital has to sometimes alter the facts about supplies slightly in order to get what it needs.	1	2	3	4	5
2	Sometimes our Health Centre/Hospital presents facts about essential medicines to the patients in such a way that they look good.	1	2	3	4	5
3	I think that complete honesty does not pay when dealing with patients and suppliers	1	2	3	4	5
4	Our Health Centre/Hospital sometimes has to exaggerate users' needs to benefit from it	1	2	3	4	5
5	The management of my Health Centre/Hospital will do anything within its means to further the interests of the Health Centre/Hospital	1	2	3	4	5
6	The government distorts information about certain things in order to protect their interests	1	2	3	4	5
7	Our Health Centre/Hospital always provides a truthful picture of its entire operations	1	2	3	4	5
8	Sometimes the our Health Centre/Hospital slightly alters facts in order to get what it needs	1	2	3	4	5
9	The management of my Health Centre/Hospital has on several occasions promised to do things and does not do them	1	2	3	4	5
10	Sometimes the management of my Health Centre/Hospital presents facts in such away that they look good	1	2	3	4	5
11	On several occasions, the management of my Health Centre/Hospital has lied about certain things in order to protect their interests	1	2	3	4	5
12	Sometimes the management of my Health Centre/Hospital has to exaggerate their offer in order to get what they really need from government	1	2	3	4	5

	Asset Specificity	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	My Health Centre/Hospital has the needed specialized facilities for effective handling of essential medicines					
2	My Health Centre/Hospital has the needed specialized facilities for effective storage of essential medicines	1	2	3	4	5
3	Certain fees must be paid by the Health Centre/Hospital before the supply of essential medicines	1	2	3	4	5
4	The current facilities for the Health Centre/Hospital are dedicated to handling of supplies of essential medicines	1	2	3	4	5
	Behavioral Uncertainty	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	Its difficult to be assured that services of National Medical Stores are reliable	1	2	3	4	5
2	its difficult to be assured that National Medical Stores will perform well in the supply of essential medicines to the Health Centre/Hospital	1	2	3	4	5
3	After my Health Centre/Hospital has issued the goods receipt note, its difficult to return the medicines to NMS	1	2	3	4	5
4	After my Health Centre/Hospital has issued the goods receipt note, its difficult to exchange the defective medicines	1	2	3	4	5
5	It is difficult for my Health Centre/Hospital to be assured that the supplier (NMS) delivery date is reliable	1	2	3	4	5
7	It is difficult for my Health Centre/Hospital to be assured that the transactions with NMS will not involve other costs	1	2	3	4	5
8	Is difficult for my Health Centre/Hospital to predict how much inventory to stock	1	2	3	4	5

SECTION V: SUPPLY CHAIN PERFORMANCE

		Strongly Disagree(1)	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	National Medical Stores (NMS) establishes more frequent contact with my Health Centre/Hospital	1	2	3	4	5
2	NMS creates a compatible combination and information system	1	2	3	4	5
3	Our Health Centre/Hospital extends its supply chain beyond its patients/supplier	1	2	3	4	5
4	Our Health Centre/Hospital participates in the marketing effort of the Ministry of Health	1	2	3	4	5
5	Proximity to our Health Centre/Hospital is an important consideration for our Health Centre/Hospital	1	2	3	4	5
6	Our Health Centre/Hospital's supplies assortment of essential medicines selection criteria are well defined	1	2	3	4	5

7	NMS's capacities are sufficient to handle any possible needs of our patients	1	2	3	4	5
8	Distribution channels in our supply chain can sufficiently supply the current patients	1	2	3	4	5
9	Logistical activities in our supply chain are coordinated to minimize the problems in distribution/service	1	2	3	4	5
10	We have a high-level of responsiveness in our Health Centre/Hospital to meet patients' needs	1	2	3	4	5
11	We have an integrated system across functional areas under Health Centre/Hospital control	1	2	3	4	5
12	Within our Health Centre/Hospital we emphasize on communication and information flow among order, inventory management and distribution processes	1	2	3	4	5
13	As a result of essential medicines supply chain practices in our Health Centre/Hospital, on-time delivery of our' orders is significantly increased	1	2	3	4	5
14	As a result of essential medicines supply chain practices in our Health Centre/Hospital, the level of patient service is increased.	1	2	3	4	5
15	As a result of essential medicines supply chain practices in our Health Centre/Hospital, our overall competitiveness is significantly increased.	1	2	3	4	5

APPENDIX II
NMS /MANUFACTURERS OFFICERS QUESTIONNAIRE

Dear Respondent,
This questionnaire seeks to establish the relationship between **Governance Structures, Ethical Behaviour and Supply Chain Performance of Essential Medicine in Eastern Uganda.** You have been selected to participate in this study because we believe you will provide the information we need. The information you provide will be used for purely academic purposes and will be treated with utmost confidentiality.

Thank you for your time and cooperation

SECTION I: GENERAL INFORMATION

Please tick the appropriate response for the questions below:

Demographic Characteristics

1. Do you experience occurrences of essential medicines stock outs/expiry?

Code	**1**	**2**
	Yes	No
Tick		

2. Level of Education

Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Level	No Education	Primary	Secondary	Diploma	Bachelors degree	Masters	PhD
Tick							

3. For how long has your organization been in existence?

Code	**1**	**2**	**3**	**4**
Duration	0-5yrs	5-10 yrs	10-25 yrs	Over 25 yrs
Tick				

4. How many customers does your organisation attend to daily?

Code	**1**	**2**	**3**	**4**	**5**
No.	Less than 10	11-30	31-50	Over 50	Not sure
Tick					

Please indicate by ticking in the appropriate box to the extent to which you agree with the statement below:

SECTION II: GOVERNANCE STRUCTURES

	Legal safeguards	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	Because we have been doing business so long with our customers, all kinds of procedures have become self-evident	1	2	3	4	5
2	The contract forms the core of our relationship with this customer	1	2	3	4	5
3	The risk in the relationships with our customers is sufficiently covered by contractual and non-contractual means	1	2	3	4	5
4	The contract with this customer is as complete as possible					
5	Because we have been doing business so long with our customers, we can understand each other well and quickly					
6	In our relationships with our customers, it is assumed that contracts will in general be renewed					
7	It is not so important in this relationship to have a good contract					
8	Actually, we cannot afford a break with our customers	1	2	3	4	5
9	If the relationship with our customers break, it will take us much effort to fill the gap in turnover	1	2	3	4	5
10	Our customers can not afford a break with us	1	2	3	4	5
11	If the relationship with our firm breaks, the customer will have trouble finding a comparable supplier	1	2	3	4	5
12	We know much more about the customers than they know about us	1	2	3	4	5
13	Our customers are more dependant on us than we are on them	1	2	3	4	5
14	For the foreseeable future we do not expect a break with our customers					
		1	2	3	4	5
	Private ordering					
1	The customer shares in the payment for specific machines and apparatus that we must use for the supply of the essential medicines	1	2	3	4	5
2	The customer shares in the payment for the investments in specific tools and/or measurement apparatus that we must make for the production of the essential medicines	1	2	3	4	5
4	We give guarantees for supply for an agreed period of time	1	2	3	4	5
5	The location of our organisation plays an important role in the relation with our customers	1	2	3	4	5
6	There is restriction of room for opportunism in our organisation	1	2	3	4	5
7	We provide an important source of information on essential medicines for our customers	1	2	3	4	5
8	Our organisation is involved in an early stage in the development of new essential medicines for our customers	1	2	3	4	5
9	Our customers involve us in the testing of components and/or in prototyping	1	2	3	4	5
10	The relationship between our organisation and our customers has continuously improved in the course of time	1	2	3	4	5
11	Our supply to our customers has increased strongly in the course of time	1	2	3	4	5
12	If our customers do not behave fairly, they could seriously damage their reputation in the market	1	2	3	4	5

SECTION III: ETHICAL BEHAVIOUR

	Business Practices	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	I call in sick in order to take a day off	**1**	**2**	**3**	**4**	**5**
2	I report a co-worker's violation of the organisations' policies and guidelines	**1**	**2**	**3**	**4**	**5**
3	I do not divulge confidential information to parties external to the organisation	**1**	**2**	**3**	**4**	**5**
4	I takethe necessary time to do a job	**1**	**2**	**3**	**4**	**5**
5	I do not take extra personal time during lunch hour, break and early departures	**1**	**2**	**3**	**4**	**5**
6	Falsifying time/quality/quantity reports	**1**	**2**	**3**	**4**	**5**
7	I do not authorize subordinates to violate the organisation's policies and guidelines	**1**	**2**	**3**	**4**	**5**
8	I do not falsify internal time/quality/quantity reports for the organisation	**1**	**2**	**3**	**4**	**5**
9	I do not pass blame for errors to an innocent co-worker	**1**	**2**	**3**	**4**	**5**
10	I do not claim credit for peers' work	**1**	**2**	**3**	**4**	**5**
11	I give gifts/favors in exchange for preferential treatment	**1**	**2**	**3**	**4**	**5**
12	I accept gifts/favors in exchange for preferential treatment	**1**	**2**	**3**	**4**	**5**
13	I overstate expense accounts by more than 10% of the correct amount	**1**	**2**	**3**	**4**	**5**
14	I use the organisational services for personal use	**1**	**2**	**3**	**4**	**5**
15	I remove the organisations' supplies for personal use	**1**	**2**	**3**	**4**	**5**
16	I use the organisation time for personal business	1	2	3	4	5
	Relativism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	There are no ethical principles that are so important that they should be part of any code of ethics.	1	2	3	4	5
2	What is ethical varies from one situation and organisation to another.	1	2	3	4	5
3	Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.	1	2	3	4	5
4	Different types of moralities cannot be compared as to "rightness".	1	2	3	4	5
5	What is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.	1	2	3	4	5
6	Moral standards are simply personal rules which indicate how a person should behave, and are not to be applied in making judgments of others.	1	2	3	4	5
7	Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.	1	2	3	4	5
8	Rigidly codifying an ethical position that prevents certain types of actions stand in the way of better human relations and adjustment.	1	2	3	4	5
9	No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends upon the situation.	1	2	3	4	5

10	Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.	1	2	3	4	5
	Idealism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	An organisation should make certain that its actions never intentionally harm another even to a small degree.	1	2	3	4	5
2	Risks to another should never be tolerated, irrespective of how small the risks might be.	1	2	3	4	5
3	The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.	1	2	3	4	5
4	One should never psychologically or physically harm another person.	1	2	3	4	5
5	One should not perform an action which might in any way threaten the dignity and welfare of another individual.	1	2	3	4	5
6	If an action could harm an innocent other, then it should not be done.	1	2	3	4	5
7	Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences of the act is immoral.	1	2	3	4	5
8	The dignity and welfare of people should be the most important concern in any organisation.	1	2	3	4	5
9	It is never necessary to sacrifice the welfare of others.	1	2	3	4	5
10	Moral actions are those which closely match ideals of the most "perfect" action.	1	2	3	4	5

SECTION IV: TRANSACTION COSTS

	Opportunism	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	Our organisation has to sometimes alter the facts about supplies slightly in order to get what it needs.	1	2	3	4	5
2	Sometimes our organisation presents facts about essential medicines to the patients in such a way that they look good.	1	2	3	4	5
3	I think that complete honesty does not pay when dealing with patients and suppliers	1	2	3	4	5
4	Our organisation sometimes has to exaggerate users' needs to benefit from it	1	2	3	4	5
5	The management of my organisation will do anything within its means to further the interests of the organisation	1	2	3	4	5
6	The government distorts information about certain things in order to protect their interests	1	2	3	4	5
7	Our organisation always provides a truthful picture of its entire operations	1	2	3	4	5
8	Sometimes the our organisation slightly alters facts in order to get what it needs	1	2	3	4	5
9	The management of my organisation has on several occasions promised to do things and does not do them	1	2	3	4	5
10	Sometimes the management of my organisation presents facts in such away that they look good	1	2	3	4	5
11	On several occasions, the management of my organisation has lied about certain things in order to protect their interests	1	2	3	4	5
12	Sometimes the management of my organisation has to exaggerate their offer in order to get what they really need from government	1	2	3	4	5

	Asset Specificity	Strongly Disagree(1)	Disagree(2)	Not Sure (3)	Agree(4)	Strongly Agree(5)
1	My organisation has the needed specialized facilities for effective handling of essential medicines					
2	My organisation has the needed specialized facilities for effective storage of essential medicines	1	2	3	4	5
3	Certain fees must be paid by the organisation before the supply of essential medicines	1	2	3	4	5
4	The current facilities for the organisation are dedicated to handling of supplies of essential medicines	1	2	3	4	5
	Behavioral Uncertainty	**Strongly Disagree(1)**	**Disagree(2)**	**Not Sure (3)**	**Agree(4)**	**Strongly Agree(5)**
1	Its difficult to be assured that services of my organisation are reliable	1	2	3	4	5
2	its difficult to be assured that my organisation will perform well in the supply of essential medicines to the Health Centres/Hospitals	1	2	3	4	5
3	After my organisation has issued the goods receipt note, its difficult to exchange the defective medicines	1	2	3	4	5
4	It is difficult for my organisation to be assured that the supplier delivery date is reliable	1	2	3	4	5
5	It is difficult for my organisation to be assured that the transactions with other members of the supply chain will not involve other costs	1	2	3	4	5
6	Is difficult for my organisation to predict how much inventory to stock	1	2	3	4	5

SECTION V: SUPPLY CHAIN PERFORMANCE

		Strongly Disagree(1)	Disagree(2)	Not Sure (3)	Agree(4)	Strongly Agree(5)
1	My organisation establishes more frequent contact with members of the supply chain	1	2	3	4	5
2	My organisation creates a compatible combination and information system	1	2	3	4	5
3	Our organisation extends its supply chain beyond its patients/supplier	1	2	3	4	5
4	Our organisation participates in the marketing effort of the Ministry of Health	1	2	3	4	5
5	Proximity to our organisation is an important consideration for the health officers	1	2	3	4	5
6	Our organisation's supplies assortment of essential medicines selection criteria are well defined	1	2	3	4	5
7	My organisation's capacities are sufficient to handle any possible needs of the Health Centres/Hospitals	1	2	3	4	5
8	Distribution channels in our supply chain can sufficiently supply the current patients	1	2	3	4	5
9	Logistical activities in our supply chain are coordinated to minimize the problems in distribution/service	1	2	3	4	5
10	We have a high-level of responsiveness in our organisation to meet patients' needs	1	2	3	4	5
11	We have an integrated system across functional areas under the organisation's control	1	2	3	4	5

12	Within our organisation we emphasize on communication and information flow among order, inventory management and distribution processes	1	2	3	4	5
13	As a result of essential medicines supply chain practices in our organisation, on-time delivery of our' orders is significantly increased	1	2	3	4	5
14	As a result of essential medicines supply chain practices in our organisation, the level of patient service is increased.	1	2	3	4	5
15	As a result of essential medicines supply chain practices in our organisation, our overall competitiveness is significantly increased.	1	2	3	4	5

APPENDIX III
PATIENTS QUESTIONNAIRE

Dear Respondent,
This questionnaire seeks to establish the relationship between Governance Structures, Ethical Behaviour and Supply Chain Performance of Essential Medicine in Eastern Uganda. You have been selected to participate in this study because we believe you will provide the information we need. The information you provide will be used for purely academic purposes and will be treated with utmost confidentiality.

SECTION I: GENERAL INFORMATION

Please tick the appropriate response for the questions below:

Demographic Characteristics

1. What is the name of your Health Centre/Hospital (optional):
   ……

2. How long does it take your Health Centre/Hospital to receive essential medicines from National Medical Stores

Code	1	2	3	4
Duration	Less than a week	1-4 weeks	1-2 months	Over 3 months
Tick				

3. Do you experience occurrences of essential medicines stock outs/expiry?

Code	1	2
	Yes	No
Tick		

4. Level of Education

Code	1	2	3	4	5	6	7
Level	No Education	Primary	Secondary	Diploma	Bachelors degree	Masters	PhD
Tick							

5. For how long has the Health Centre/Hospital been in existence?

Code	1	2	3	4
Duration	0-5yrs	5-10 yrs	10-25 yrs	Over 25 yrs
Tick				

SECTION II SUPPLY CHAIN PERFORMANCE

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
The time spent to receive medicine from health centre/hospital is short	1	2	3	4	5
My essential medicine needs are usually administered in a timely manner	1	2	3	4	5
There is a high-level of responsiveness at our Health Centre/Hospital to meet patients' needs	1	2	3	4	5
The time between examination and receiving of medicine from the health centre/hospital is short	1	2	3	4	5
There usually many patients waiting to receive essential medicines	1	2	3	4	5
We work together with the health/hospital officials	1	2	3	4	5
The health centre/hospital officials are always flexible while giving out essential medicines	1	2	3	4	5
Our delivery schedules for essential medicines are always on time	1	2	3	4	5
My health centre/hospital often experiences stock outs of essential medicines	1	2	3	4	5
Proximity to our Health Centre/Hospital is an important consideration for our Health Centre/Hospital	1	2	3	4	5
Our Health Centre/Hospital's supplies of essential medicines selection is clear	1	2	3	4	5
Communication on the unavailability of essential medicines at my health centre/hospital is done in time	1	2	3	4	5