



## PROCUREMENT PROCESS AND PERFORMANCE OF PUBLIC HOSPITALS IN RWANDA: A CASE OF MASAKA HOSPITAL

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### Abstract

*This research is aiming generally to evaluate the effects of procurement process on the performance of public hospital in Rwanda; with reference of Masaka Hospital. The study presents the specified research objectives including: "1. To assess the effects of procurement ethics on performance of Masaka Hospital; 2. To determine the effects of electronic procurement on performance of Masaka Hospital and 3. To analyze the effects of evaluation of purchasing on performance of Masaka Hospital. This study was carried out in Masaka Hospital located in Masaka Sector of Kicukiro District; and research was based for the period of four years ranging from 2015 up to 2019. The study takes theoretical references on general theories as Principal Agency Theory; Legitimacy Theory and The Institutional Theory. The entire population is 80 workers in different departments; specifically, the target sample size of this study is comprised of 67 employees who especially perform in procurement divisions and nearly related departments in Masaka Hospital. Therefore, the questionnaire, interview and documentation research techniques were used during data collection. And then the generalized regression model as well as  $\text{Log}Y = \beta_0 + \beta_1 \text{Log}X_{it1} + \beta_2 \text{Log}X_{iit2} + \beta_3 \text{Log}X_{iit3} + \varepsilon_t$ ; that gives  $\text{Log} OP = \beta_0 + \beta_1 \text{Log} PP_{t1} + \beta_2 \text{Log} ELP_{t2} + \beta_3 \text{Log} EVAP_{t3} + \varepsilon_t$ ; was used in order to test statistical effects among variables where the evaluation of mean and standard deviation-correlation including their statistical in figures as components, were presented by researcher.*

*Keywords: Procurement process, performance, public hospitals*

## INTRODUCTION

### Background of the study

The procurement function has not been given the recognition it deserves in developing countries, in most public entities, regardless of the effort by the partners like the World Bank, the International Trade Organization, the United Nations Conference on Trade and Development, the World Trade Organization and, others. This could be deliberate or sheer ignorance on the value the procurement function could contribute to any organization (Telgen, Zomer, & de Boer, 1997). Ardent Partners published a report that presented a comprehensive, industry-wide view into what is happening in the world of procurement today by drawing on the experience, performance, and perspective of nearly 250 chief procurement officers and other procurement executives. The report includes the main procurement performance and operational benchmarks that procurement leaders use to gauge the success of their organizations. This report found that the average procurement department manages 60.6% of total enterprise spend. This measure commonly called "spend under management" refers to the percentage of total enterprise spend (which includes all direct and indirect spend) that a procurement organization manages or influences. The average procurement department also achieved an annual savings of 6.7% in the last reporting cycle, sourced 52.6% of its addressable spend, and has a contract compliance rate of 62.6% (Weele Van 2010).

Almost all purchasing decisions include factors such as delivery and handling, marginal benefit, and price fluctuations. Procurement generally involves making buying decisions under conditions of scarcity. If good data is available, it is good practice to make use of economic analysis methods such as cost-benefit analysis or cost-utility analysis. An important distinction should be made between analyses without risk and those with risk. Where risk is involved, either in the costs or the benefits, the concept of best value should be employed. Procurement activities are often split into two distinct categories, direct and indirect spend. Direct spend refers to production-related procurement that encompasses all items that are part of finished products, such as raw material, components and parts. The first category being direct, production-related procurement and the second being indirect, non-production-related procurement. Direct procurement, which is the focus in supply chain management, directly affects the production process of manufacturing firms (Felecia, 2010). In contrast, indirect procurement activities concern "operating resources" that a company purchases to enable its operations. Indirect procurement comprises a wide variety of goods and services, from standardized items like office supplies and machine lubricants to complex and costly products and services; like heavy equipment, consulting services, and outsourcing services.

The need to have coherent methods of performance of the procurement function in public entities, particularly in developing countries, has never been as sound as it is now. Delaying will worsen the already deteriorating performance, loss of professionals, and organizations will continue incurring unnecessary costs. It is important that appropriate performances are implemented. It should not be any performance. The issue of basing on financial performance and neglecting or ignoring non-financial performance is not helping the procurement function because only partial performance is considered (Lardenoije, Van Raaij, & Van Weele, 2005).

Historically, public entities of Rwanda have been known for their poor performance and corruption, resulting from non-adherence to processes and procedures, poor resource utilization, poor personnel management and training, inadequate payment and benefits. It is on this basis that the government of Rwanda, in 2007, set up the RPPA, under the Ministry of finance, to examine and propose recommendations on public service Improvement. The ultimate goal was to improve the general service delivery to the public, create efficiency and effectiveness based on transparency in processes and procedures, performance evaluation systems and clear organizational goals and objectives (RPPA, 2009).

However, Masaka hospital like other public entity need to set the strategies that help its to achieve its objectives and perfume well its function, as it experience the purchases of working product, like drugs and other related materials, it is against this background that the researcher want to conduct a study on the procurement process and performance of public hospitals in Rwanda case study: “Masaka Hospital”

### **Problem statement**

Despite the Public Procurement Law enacted in April 2007, with an aim of guiding the procurement function in public institutions, specific internal procurement factors affect the efficiency of the procurement process. Country Procurement Assessment Report (2009), prepared by a team of Government officials, World Bank and donor staff, and national consultants, reveal substantial inefficiency in public procurement they concludes that the principle of “value for money” is not achieved and the health sector performance reports, says hospitals in Rwanda are grappling and suffering from Medical stock-out, Medical wastage or lack of prescribed drug in public hospitals (Gatonye, 2015). Mensah, (2013) also says that the current public sector purchasing processes are not yielding the desired results in terms of meeting operational requirements of public sector institutions on time as a result of the bureaucratic nature of the processes involved and impacts negatively on purchasing performance. Inefficiencies in the procurement processes lead to lack of control and not

realizing value for money in any business. Other problem that may result from inefficiency in the procurement process includes poor management of procurements, corruption, theft and loss of public properties.

It is against this background that the researcher is motivated to study the current status of Masaka Hospital.

### **General research objective**

The general objective of the study is to evaluate the effects of procurement process on the performance of public hospital in Rwanda, with the case study of Masaka Hospital.

### **Research questions**

1. What are the effects of procurement ethics on performance of Masaka Hospital?
2. What are the effects of electronic procurement on performance of Masaka Hospital?
3. What are the effects of evaluation of purchasing on performance of Masaka Hospital?

### **Research hypotheses**

1. The procurement ethics have statistical effects on performance of Masaka Hospital.
2. The electronic procurement has statistical effects of on performance of Masaka Hospital.
3. The evaluation of purchasing has statistical effects on performance of Masaka Hospital.

### **Scope of the study**

The research study on evaluation of procurement ethics in hospital was designed to be used as a management tool that provides guidelines for effective procurement of goods, works and services in Rwandan Hospital.

### ***Time scope***

The study was covered four years from 2015 to 2019 all information's related to procurement process and performance of Masaka hospital. Therefore, the period of 2015 has been chosen as first year to be followed by collecting data then the period of 2019 has been considered as last year of data collection.

### ***Geographic scope***

The study was carried out in Masaka Sector of Kicukiro District.

### **Content scope**

This was taken as the case study because of its accessibility to the researcher. The study was aimed to achieving stated objective that is the analysis of procurement process and performance of Masaka hospital. The study focuses on operations of procurement process and performance of public hospital

### **Significance of the study**

This study is benefit different groups of people, how procurement process and performance of public hospitals in Rwanda can contribute and help to perform well in public institutions in Rwanda. The study benefits the following groups of people in this order respectively. It helped the Researcher to add knowledge and skills acquired in class and help him or her to come with procurement process and performance of hospitals in Rwanda. It is useful to Managers and Procurement officers especially in it field, Making decisions and respond to the needs in different department in public hospitals in Rwanda. The research finding out and reports could be served as a document used as reference to the student and staff who needed to involve in research into the same

## **LITERATURE REVIEW**

### **Concept of the study**

#### ***Concept of procurement process***

A professional procurement process can be incredibly beneficial if you're looking to streamline purchasing. It can ensure that you pay the best price for goods or services, save time by choosing the most reputable vendors, and minimize order delays and mistakes. Let it be known that there is no one-size-fits-all procurement process. Some organizations require a formal process to suit their complex environment, which is often the case in government or education. In those industries, vendors must comply with strict guidelines. Others, like enterprise businesses, require a few key steps in an effort to manage budgets more effectively. In any case, the following is representative of a typical procurement cycle from the perspective of the purchaser (Thai, 2011).

Procurement means acquiring goods and services from an outside source. The term procurement is widely used in government; many private companies use the terms purchasing and outsourcing. Organizations or individuals who provide procurement services are referred to as suppliers, vendors, contractors, subcontractors, or sellers; of these terms, suppliers is the most widely used. Many IT projects involve the use of goods and services from outside the organization. Procurement in general is part of the supply management which is divided into

logistics, procurement and materials management. The term procurement is used in Business to Business (B2B) and stands for the buying process of companies of services and goods. The goal of the procurement process is to buy the needed product or service for the most favorable price. To support this, often tenders are used in which potential suppliers compete. Companies and public bodies often define specific procurement and processes and selection criteria to avoid fraud (Thai, 2011).

### **Concepts of procurement ethics**

Procurement ethics is a form of applied ethics or professional ethics, that examines ethical principles and moral or ethical problems that can arise in a procurement environment. It applies to all aspects of procurement conduct and is relevant to the conduct of individuals and entire organizations. These ethics originate from individuals, organizational statements or from the legal system. These norms, values, ethical, and unethical practices are the principles that guide a procurement. They help the procurement to maintain a better connection with their stakeholders. Procurement ethics refers to contemporary organizational standards, principles, sets of values and norms that govern the actions and behavior of an individual in the procurement organization. Procurement ethics have two dimensions, normative procurement ethics or descriptive procurement ethics. As a corporate practice and a career specialization, the field is primarily normative. Academics attempting to understand procurement behavior employ descriptive methods. The range and quantity of procurement ethical issues reflects the interaction of profit-maximizing behavior with non-economic concerns (Odhiambo and Kamau, 2012).

### **Concepts of electronic procurement**

E-procurement practices refer to the use of computer-internet based system to carry out individual or groups of the procurement process, including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Asumba, 2010). Krawiec et al. (2010) describe three types of e-procurement practices systems which are buyer e-procurement practices systems; seller e-procurement practices systems; and online intermediaries. There are various forms of e-procurement practices that concentrate on one or many stages of the procurement process, such as e-tendering, e-marketplace, e-auction/reverse auction, and e-catalogue. As noted by Nelson et al. (2011), purchasing accounts for the majority of organizational spending. As such, the advent of web-based electronic procurement has been heralded as a 'revolution' because of its potential to reduce the total cost of acquisition. It is also expected to impact on

the nature of supplier governance, either reinforcing market-based relationships or encouraging virtual hierarchies.

### ***Concepts of evaluation of purchasing***

Evaluation of purchasing and supplier appraisal is terms used in business and refers to the process of evaluating and approving potential suppliers by quantitative assessment. The aim of the process is to ensure a portfolio of best-in-class suppliers is available for use. Evaluation of purchasing can also be applied to current suppliers in order to measure and monitor their performance for the purposes of ensuring contract compliance, reducing costs, mitigating risk and driving continuous improvement (Olsen and Ellram, 2017).

Evaluation of purchasing and take-on is a continual process within purchasing departments, and forms part of the pre-qualification step within the purchasing process, although in many organizations it includes the participation and input of other departments and stakeholders. Most experts or firms experienced in collecting evaluation of purchasing information prefer doing so using five-step processes for determining which to approve. Their processes often take the form of either a questionnaire or interview, sometimes even a site visit, and includes appraisals of various aspects of the supplier's business including capacity, financials, quality assurance, organizational structure and processes and performance. Based on the information obtained via the evaluation, a supplier is scored and either approved or not approved as one from whom to procure materials or services. In many organizations, there is an approved supplier list (ASL) to which a qualified supplier is then added. If rejected the supplier is generally not made available to the assessing company's procurement team. Once approved, a supplier may be reevaluated on a periodic, often annual, basis. The ongoing process is defined as supplier performance management (Olsen and Ellram, 2017).

## **Theoretical Review**

### ***Principal Agency Theory***

The Principal-Agency Theory is the underpinning theory used to establish the framework for this study. The Principal-Agent Theory is an agency model developed by economists that deals with situations in which the principal is in position to induce the agent, to perform some task in the principal's interest, but not necessarily the agent's (Health & Norman, 2004). Several studies (Eisenhardt 1988; Bergen et al., (1992); and Rokkan Buvik (2003) have contributed to the literature on principal agent theory. All these contributions have one main theme which is the relationship between a principal and an agent.

The Principal-Agent Theory concerns with the arrangement that exists when one person or entity (called the agent) acts on behalf of another (called the Principal). The principals contract with the agent to perform some services on the principal's behalf. These contracts require the agent to exert effort and make decisions. For example shareholders of a company (principals) elect management (agents) to act on their behalf, and investors (principals) choose fund managers (agents) to manage their assets. That is the management make operational decisions on behalf of the company shareholders for instance maximization of revenues and minimization of costs among other decisions. With this relationship, the principal engages the agent who acts and makes decisions on behalf of the principal (Eisenhardt, 1989; Bergen et al., 1992). This relationship works well when the agent is an expert at making the necessary decisions, but does not work well when the interests of the principal and agent differ substantially.

In general, a contract is used to specify the terms of a principal agent relationship. According to Eisenhardt (1989), Agency theory is directed at the ubiquitous agency relationship in which one party (the principal) delegates work or tasks to another party (the agent) who performs that work. Agency theory describes this type of relationship using the metaphor of a contract (Jensen & Meckling, 1976). Agency relationships are enacted in a broader social context for the adoption of policies about aligning incentives in order to discourage self-interested behavior by managers and reducing agency costs. A number of studies have shown that procurement contributes about 60%-70% of an organization's expenditures.

Following the operational nature of procurement expenditures, decisions must be taken by the organization's management (agents) on behalf of the company owners (principals) under the power entrusted to them through their employment contracts. The theory also answers two specific problems that is, the goals of the principal and agents are not in conflict (agency problem) and that the principal and agent reconcile different tolerances for risk. The principals and agents seek to maximize their utility from the same organizations.

As the shareholders seek to maximize their wealth in form of profits (dividends) made by the company, management too seeks to maximize their utility by way of earnings. Also, because of the different roles of these two parties in the organization, the risk tolerance levels differ. As the shareholders' risk appetite levels are normally low because of the need to protect the value of their wealth, management normally tolerate higher risk; these are normally reconciled in order for the company to operate well. Procurement management is an essentially risky function that involves management decisions in optimally allocating the limited resources that are provided by the shareholders hence the need to minimize the involved risks so as us ensure competitiveness.



### ***Legitimacy Theory***

The Legitimacy Theory states that the organization has the mandate to state its activities to the stakeholders, more specifically to the public and state the benefits the society will get from it (Wilmshurst and Frost, 2000). A state that is there when an organization's value system is in line with the value system of the society that the organization exists. Legitimacy is a perception that the acts of the organization are acceptable in the constructed system of behavior in the society that it exists in (Suchman, 1995).

Legitimacy Theory therefore brings in good understanding in the government procurement systems. The concept of legitimacy strongly suggests that the social contract which is between the government and the public can be eliminated. In government procurement context, there are issues (such as cronyism and corruption) that could endanger the legitimacy practice. In accordance to the Legitimacy Theory, government officers' choices of legitimizing implementation strategies are focused on the interpretation of the local authority or department involved, and different government officers will likely have different ideas of what is expected of them from the public and whether the department or agency or local authority is viewed by the society as complying with the expectations that is expected from them (Deegan et al., 2002). The legitimacy theory argues that officers make the disclosure practice as a way of building a good reputation among the stakeholders and the society at large (Magness, 2006).

### ***The Institutional Theory***

Institutional theory describes the effects of external institutional pressures on organizations and defines institutions as regulatory structures, government agencies, laws, courts, and professions, as well as interest groups and public opinion. The rules and norms set out by the institutions in an environment are endorsed by various actors. When speaking of actors and institutional environment in this research project, reference is made to the norms represented by the actors in the environment and the pressure that these norms exert on other actors in the environment. A strength attributed to institutional theory is its ability to explain non-choice behavior of organizations how they conform to norms without questioning them and undertaking public function (Makabira, 2014).

According to Scott (2003), institutions are composed of cultural-cognitive and regulative elements that together with associated activities and resources give meaning to life. The author explains the three pillars of institutions as regulatory (policy), normative and cultural cognitive. The regulatory (policy) pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism with emphasis on compliance. The normative pillar refers to norms-how things

should be done and the values preferred desired. The cultural pillar rests on shared understanding (common beliefs, symbols, shared understanding).

The PPDA (2005) requires that proper maintenance and keeping of records be implemented in all public procuring entities hence need to have policies, norms and rules to the effect. Borrowing from this theory, public procuring entities are guided by rules and regulations like the PPDA (2005), PPDR (2006) and policies to be used in implementing the act as well as the regulations hence policies on records management. From the three pillars of institutions propounded by Scot (2003) such as organizational culture, social influence, organizational incentives and enforcement are identified as antecedents of compliance to procurement records management.

## Empirical Review

### ***Procurement process and performance of institution***

#### *Forms of procurement*

There are two forms of procurement: strategic and operative procurement. Strategic procurement includes an assessment of demand, a tendering phase, the selection of the supplier and finally the placing of the order. The operative procurement starts when the strategic one ends with the supervision of orders, stock receipt, accounting control and the payment.

#### *Steps of the procurement process*



Source: Olsen and Ellram, (2017).

The first step is to define business needs, which includes the identification of the business requirements to consult the stakeholder. The category of good that is needed also has influence on the procurement process, please see the next paragraph. Afterwards the procurement strategy is developed. This step of the process has the objective to agree on the procurement approach and timescales, evaluate the current environment and calculate a budget. The third step is the supplier evaluation and selection with the objective to select the right supplier (not necessarily the cheapest). Step four is the negotiation and award of contract which completes the negotiation with a signed contract. If there was already a framework agreement in place, there is only a purchase order (PO) send to the seller. The last step is the

induction and integration to ensure that the supplier is fully prepared to deliver all aspects of the contract and to initiate the relevant performance measures and reporting (Olsen and Ellram, 2017).

#### Stage 1: Identify Goods or Services Needed

The onset of the procurement process begins when a business has a need for a good or service. These goods or services can be internal meaning any materials required to run the business, or external materials that the business will eventually sell. This stage also includes setting a budget. Take, for example, our client that supplies tires for automobiles. One of their local branches is running low on a particular type of tire. In this stage, they would determine the type of tire, how many tires they need, when they need them to arrive, and approximately how much they should cost.

#### Stage 2: Explore and Select Vendor(s)

This stage is all about sourcing potential vendors and determining their ability to provide the best value and quality for your goods or services. While the stage seems straightforward, it's important to find vendors who not only deliver a high quality product for a competitive price, but who have a strong reputation.

#### Stage 3: Submit Purchase Requisition

The next stage in the procurement process involves getting the thumbs up from the internal department that controls finances to purchase your goods or services. This includes creating a purchase requisition document and submitting it to that department. It's important to note here that you're not actually ordering anything from the vendor, you're getting the internal approval to do so. While purchase requisitions vary depending on the organization, the tire supplier would share the following information with purchasing for their approval: purchaser's location or department (name of branch), the quantity and description of supplies requested, the name of the vendor that is providing the goods.

#### Stage 4: Create Purchase Order

This is where the buying happens. Once the purchase requisition has been approved, the department that controls finances issues a purchase order (PO) to the vendor. Purchase orders are typically created using electronic purchasing systems like Purchase Control, which enable businesses to track POs and submit them electronically.

#### Stage 5: Receive Invoice and Order

This stage in the procurement process receiving the invoice and the order may or may not happen together; one may arrive before the other. The vendor sends an invoice to the purchaser which describes exactly what the order includes. The invoice confirms the sale and reaffirms exactly when the payment is due. When the purchaser receives the order, they

typically have a limited amount of time to notify the vendor of any issues with the good or service. At this point, three documents purchase orders, order receipts (which arrives with the order), and vendor invoices are aligned and reconciled, highlighting any discrepancies to ensure that what you are being charged matches what you have received.

#### Stage 6: Pay for Goods or Services

Upon receiving the order as described, the purchaser sends payment to the vendor within the specified timeframe.

#### Stage 7: Record for Audit

The final stage in the procurement cycle is important for all around good bookkeeping and for audit purposes. Auditors require thorough documentation of all purchases, so all relevant documents from purchase requisition through invoice should be stored in one central location.

#### *How does an e-procurement software fit into the procurement cycle?*

An e-procurement software like Purchase Control helps streamline virtually every stage in the procurement process. Automated vendor catalogues make searching for vendors (stage 2) far easier than scouring the web for hours on end. Purchasers are automatically linked to all vendors that have been selected previously company-wide. This helps maintain consistency across the purchasing company's locations, as well as ensure you are getting the best bang for companies' buck. Purchase requisitions can be generated, delivered, and approved all in one place (stage 3). The same goes for purchase orders and invoices (stages 4 and 5). Storing this information in one central location makes communication easier and faster between all parties. A full audit trail is kept for every order from requisition through invoice, making it easier than ever to ensure accountability (stage 7). With an e-procurement system like Purchase Control, you can keep track of every detail related to an order without the hassle of paperwork. Following these procurement steps can help you control company spending. Choosing an e-procurement system instead of relying on Excel and email to manage your procurement process makes purchases faster, requires less time, and saves you money (Olsen and Ellram, 2017).

#### ***Procurement ethics and performance of institution***

Procurement ethics involve as sound public procurement policies and practices are among the essential elements of good governance (Odhiambo and Kamau; World Bank, 2012). Otieno (2014) notes the irregular procurement activities in public institutions provide the biggest loophole through which public resources are misappropriated. In some cases, tenders are awarded to firms either through single sourcing or manipulation of bids; and worse still, full

payments have often been made for projects that fail to take off or are abandoned half way. Still in other cases, tenders are awarded to un-competitive bidders through irregular disqualification of the lower bidders.

According to Thai (2011), the basic principles of good procurement ethics include accountability, where effective mechanisms must be in place in order to enable procuring entities spend the limited resources carefully, knowing clearly that they are accountable to members of the public; competitive supply, which requires the procurement be carried out by competition unless there are convincing reasons for single sourcing; and consistency, which emphasizes the equal treatment of all bidders irrespective of race, nationality or political affiliation. An ideal procurement system should also focus on effectiveness, where procuring entities should meet the commercial, regulatory and socio-economic goals of government in a manner that is appropriate to the procurement requirement. Furthermore, good procurement ethics should embrace: efficiency, which requires that procurement processes be carried out as cost effectively as possible; fair-dealing, where suppliers should be treated fairly, without discrimination or prejudice including protection of commercial confidentiality where necessary. The process should also uphold integrity by ensuring that there are no malpractices; informed decision-making, which requires public bodies to base decisions on accurate information and ensure that requirements are being met. More still, the procurement ethics should be responsive to aspirations, expectations and needs of the target society. Finally, there is need for transparency to enhance openness and clarity on procurement policy and its delivery (World Bank, 2012).

### ***Electronic procurement and performance of institution***

It has become necessary for companies to provide their customers with a cost-effective total solution and better customer satisfaction with innovative ideas and methods (Osmonbekov et al., 2012). With the emergence of Information and Communication Technology (ICT), companies have been forced to shift their operation from the traditional style to e-business, e-procurement practices, and e-supply chain philosophy in order to sustain themselves (Lee et al, 2017). Real-time information about demand changes is required in order for the production process to maintain the desired replenishment schedules and levels. This model is most applicable to environments with stable demand patterns, as is the case with a distribution of prescription medicine. The model indicates intermediaries when large systems are involved (Burnes, 2018).

In relation to this, continuous replenishment supply model has been integrated into hospitals for supply chain management (Krawiec et al, 2010). The idea of the continuous

replenishment supply chain model is to constantly replenish the inventory by working closely with suppliers and/or intermediaries (Langevoort, 2012; Asumba, 2010). The actual supply chain in hospitals supply chain model is focused on tracking customer demand in the production process and finished goods inventory efficiently (Kimtai et al, 2010). This integration is often achieved through the use of an information system that is fully integrated (Chinois, 2010). Through an application of such a system, the organization can receive the access to timely information that can be used to develop and modify production plans and schedules. This information is also integrated further down the supply chain to the procurement function so that the modified production plans and schedules can be supported by input materials (Eadie, 2017).

### ***Evaluation of purchasing and performance of institution***

The evaluation of purchasing function is in a grey area when it comes to competency. Supplier relationships are frequently described as strategic based on time factor and the nature of supplier relationships may be directly related to the buyer's core competence but outsourcing decisions are frequently taken without a thorough strategic review. Suppliers directly impact the quality, cost and delivery of the firms that incorporate the suppliers' outputs into their final product. Strategic purchases, high value purchases and supplier selection and evaluation in relation to the response rate have substantial implications for a firm's ability to make profits and thus should be considered as a core competence. An OEM (Original Equipment Manufacturer) operating just-in-time manufacturing may well view procurement as integral to their core competency. For smaller companies purchasing may be a core competence as the function structures and manages relationships with suppliers with whom they have little leverage as they do not represent significant cash flows (Christiansen and Maltz, 2012).

Donavon Favre (2013), global lead of Accenture's procurement solutions unit, believes work that is not a core competency should be done by an organization for which that work is a core competency. At most companies, purchasing indirect or non-critical materials are not core competencies. Parts, components and systems that entail mature technology that add nothing to the product value in the view of the customer may be considered commodities. Commodity component families can be identified as having many possible suppliers and may generate small margins, whilst strategic component families have few suppliers and high premiums.

Response time in procurement in consideration to competitive environment includes lower procurement costs, faster cycle times, reduced maverick or unauthorized buying, more highly organized information, and tighter integration of the procurement function with key back-office systems. Effectiveness includes increased control over the supply chain, proactive management of key procurement data, and higher-quality purchasing decisions within

organizations. Efficiency in procurement is more evident and has been reported as the number one reason for utilizing e-business tools (Kalakota and Whinston, 2016).

Efficiency is realized through lower costs (including the opportunity cost of time) in performing various facets of the purchasing task. E-commerce tools reduce transaction costs between organizations by facilitating communications and enabling tasks to be completed more rapidly. The conversion of paper documents for ordering, invoicing, and tracking into electronic documents lowers expenses associated with accounting, record keeping, and the various archival tasks associated with procurement. Other cost savings include economies gained from reduced order cycle time and greater timeliness in ordering and delivery. Order cycle cost reductions occur when Internet-based buying lowers managerial involvement in purchase activities and in the number of separate buying tasks and procedures that must be carried out. E-commerce tools offer the opportunity to group tasks such as vendor identification, specification transfer, and pricing into a seamless communication stream, lowering time and cost investments (Peters and Hogenson, 2015).

Further, highly knowledgeable technical personnel, reduced conflict and better coordination imply better product selection and inventory management. Importantly, e-commerce tools not only lower the cost of search but also make the search aspects of the buying process more effective. Purchasers are able to utilize Internet search engines and other Web-based product and vendor directories to widen the scope of their search. Effectiveness outcomes of increased search capabilities include lower and generally more competitive pricing as well as a wider array of quality choices. Mainly inefficiencies are brought by, ordering unapproved or nonessential items and poor compliance with corporate contracts leading to unnecessary administrative overhead and payment cost, failure to order through approved suppliers, reducing the ability of to negotiate lower prices and resulting to overall cost creep, high error rates and long purchase cycle times caused by the many stage nature of existing procurement process involving staff in lengthy reconciliation and other non value-adding activities and unnecessary complicated and time wasting logistics and fulfillment procedure involved in taking delivery of goods and services to delivering them to the end user (Peters and Hogenson, 2015).

### **Critical review**

The study gives some critical points that were not undertaken by previous researchers but then those should be considered in the future researchers when making changes to the directives on procurement process and performance of organizations.

Angeles (2017) sought to pursue the understanding of current business-to-business e-procurement practices by describing the success factors and challenges to its implementation in the corporate setting. The study through factor analysis resulted in three e-procurement success factors: supplier and contract management; end-user behavior and e-procurement business processes; and information and e-procurement infrastructure.

Murray, (2018) sought to establish perceived local government procurement best practice. Secondary research is then drawn upon to establish local government procurement's response to the economic recession. The study was set within the context of English local government. Its contribution is in highlighting that perceived best public procurement practice may well, in the short-term, be inappropriate and perhaps delay economic recovery. Suggestions for more radical short-term procurement strategic interventions were set out and justified as accelerating the economic recovery. The suggestions were considered appropriate, not only for the crisis, but also for future economic downturns or indeed any country facing such a situation. The analysis suggested that English local government procurement strategy generally remain unaltered from that adopted prior to the economic recession. It is then argued that current best practice may well hinder an economic recovery and a short-term shift in procurement strategy is required. There are reported financial benefits from outsourcing procurement in the literature. Raising purchasing process compliance from 60 per cent to 95 per cent can reduce a company's cost of goods sold by 4 per cent and procurement outsourcing across the board can reduce costs of service and materials by up to 15 per cent (Favre et al., 2014).

A noted benefit derived from outsourcing purchasing is the imposed behavioral and process discipline which the provider brings (John, 2003). It may be argued that this process discipline could and should be imposed in-house, but in reality this is often very difficult to enforce. Without process discipline it is difficult to track costs. Many smaller firms run into trouble because they simply do not know their true costs (Morgan, 2015) and we believe true cost to be even more difficult to calculate for larger firms who do not have rigorous processes. This illustrates that great care needs to be taken when setting out the value expected to be gained from engaging a service provider and the method in which this value will be measured and communicated in terms of quantified and realized benefits.

## Research gap

According to the different reports of public hospitals and RPPA as well as other books (papers & journals) written by other scholars, those were read by current researcher; he found that there are only few studies done on procurement processes and their components, and they

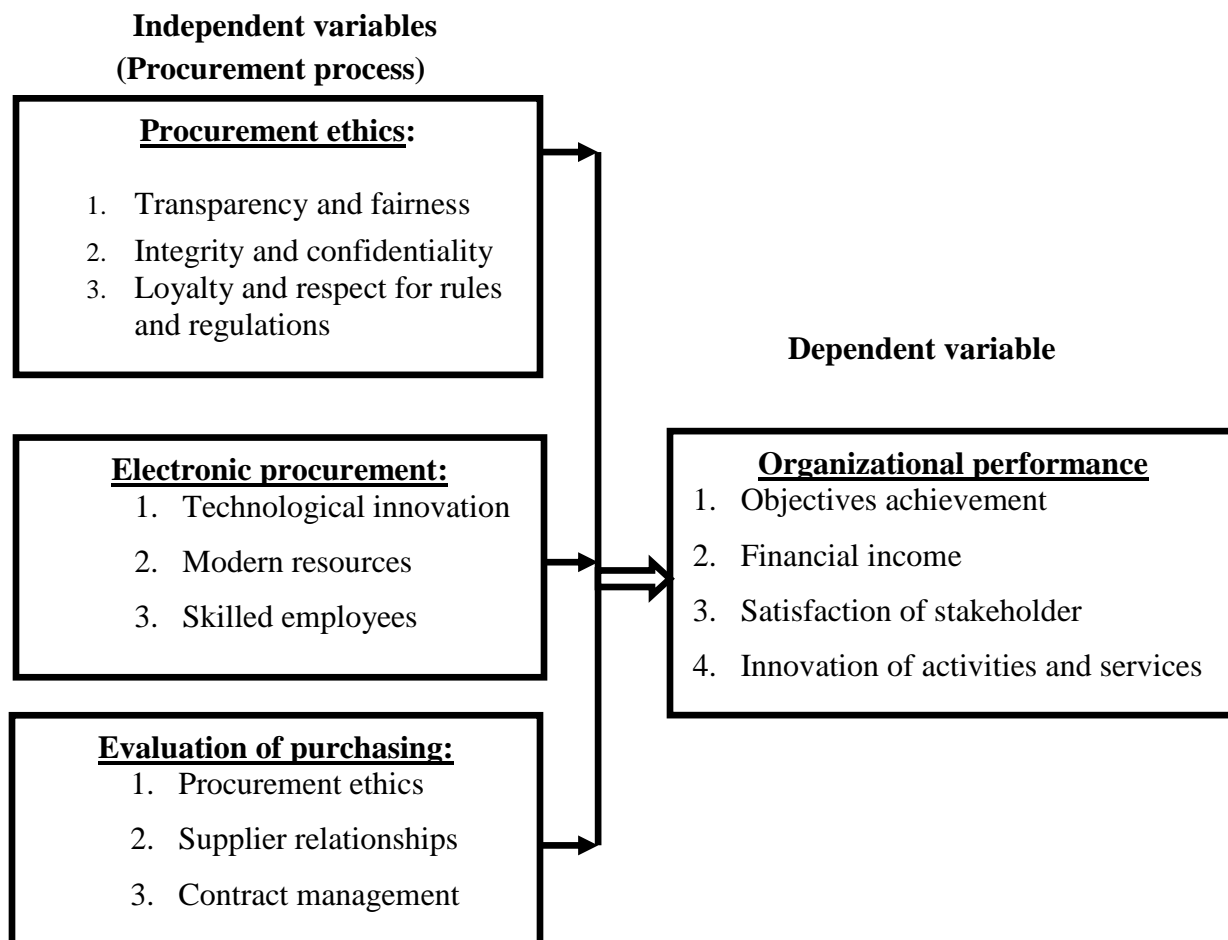


present mixed results. Their research findings show that the procurement contents towards the purchased items is often described in too many details. The goals for procurement process are included issues such as advancements in technology, improving the supply chain management; logistics and procurement functions or enhancing the processes, steps and procedures of the procuring products and services. In other words, there are no several numbers of studies those their authors did researches on procurement process and reorganizational performance on the side of Rwanda, especially for the case of public hospitals; therefore, it is from that biased gap where current researcher was motivated to do research on: “*Procurement process and performance of public hospitals in Rwanda, with the case of Masaka Hospital*”.

### Conceptual framework

This study consists two research variables which are procurement process (with its factors including procurement ethics; electronic procurement & evaluation of purchasing) as independent variables and the organizational performance as dependent variable:

Figure 1: Conceptual framework



## RESEARCH METHODOLOGY

### Research design

Research design is a specification of methods and procedures for acquiring the information needed according to Churchill, (2017). A descriptive survey design was used in this study where data describing the prevailing situation was obtained from across collected data of the respondents as employees of Masaka Hospital.

### Target population

Bailey, (2014) says that the population is universal objects over which research is to be carried out. The ideal practice in research would be to gather information from the entire population; this ensured maximum coverage of the population concerned in the research. Duttolph, (2011) argued that if the sample is selected properly, the information collected about the sample may be used to make statements about the whole population. The entire population of the study who are supposed to provide the information data related to the objectives of the research study is based on employees of Masaka Hospital who are totalized to 80 workers in different departments.

### Sample size

Before identifying the respondents to this research, it is necessary to indicate how the sample size is determined. The sample size of the study is calculated using the following formula invented by YAMEN formula. Yamen (1967) provides a simplified formula to calculate sample sizes. This formula is used to calculate the sample size and it is shown below:

$$n = \frac{N}{1 + N(e)^2}$$

Where,

n is the sample size, N is the population size, and e is the marginal of error (5%). When this formula is applied to the above sample, researcher gets following the sample size of respondents:

$$n = \frac{80}{1 + 80(0.05)^2} = \frac{80}{1.2} = 66.667 \cong 67$$

Specifically, the target sample size of this study is comprised of 67 employees some of them who are especially performing in procurement division and nearly related departments Masaka Hospital.

The rule of three formula for stratified sampling is as follows (Cohen, 2003)

$$\left[ a = n * \left[ \frac{b}{c} \right] \right]$$

Where,

a is stratified sample size; b is sample size in target population; c is total population size and then n=sample size

Table 1: Target Population and Sample Size

Category of staff	Targeted population	Calculations	Sample Size	Samples techniques
Hospital administration staff	15	$\left[ a = 67 * \left[ \frac{15}{80} \right] \right]$	13	Purposively
Procurement Department	5	$\left[ a = 67 * \left[ \frac{5}{80} \right] \right]$	4	Purposively
Departmental Heads	30	$\left[ a = 67 * \left[ \frac{30}{80} \right] \right]$	26	Purposively
Accounting Department	13	$\left[ a = 67 * \left[ \frac{13}{80} \right] \right]$	11	Purposively
Finance Department	15	$\left[ a = 67 * \left[ \frac{15}{80} \right] \right]$	13	Purposively
<b>Total</b>	<b>80</b>	-----	<b>67</b>	Purposively

Source: Masaka Hospital, August 2019

### Sampling technique

Therefore, for the case of this study, the total sample size is 67 respondents who were taken randomly, where the chosen sample of respondents are including employees who are charged and have activities related to the procurement duties (functions) of Masaka Hospital, then the current researcher has chosen the sample size of population to be questioned through simple random sampling technique, for collecting the information (data) of Masaka Hospital.

### Data collection instruments

According to Robert (2014), the data collection instruments are the tools used by researchers in order to collect primary and secondary information to be assessed in their researches and or studies. Therefore, this section is aiming to show the data collection techniques of the study such questionnaire, interview and documentation research techniques as follows:

### ***Questionnaire***

According to Kendall (2012), the questionnaire is information gathering technique that gathers information about, attitudes, beliefs, behaviors and characteristic from several respondents in the institution, who may be affected by given phenomenon or system. The questionnaires were filled and they provided free and fair responses from the respondents. The questionnaires that were used are closed questions, where the respondents were limited to specific answers or choosing from a list of responses. Therefore, the closed questions were used because they provided data that are comparable for all respondents and other data derived from interviewing tailored the unique experience and perspectives of each individual, where the questionnaires were distributed among 67 respondents as employees in Masaka Hospital.

### ***Documentation***

According to Paige (2012) documentation is a system which formally acknowledges the sources consulted for the research. According to Robert (2014) said that, one of the basic advantages of document studies is to explore the sources more fully in order to obtain additional information on an aspect of the subject. This is the extensive study and review of published documents, reports, magazines, journals and policy reports related to the topic. This is important because it reviews the literature and tries to locate global perspectives in order to make a comparative framework for analysis and evaluation for readers; therefore, the researcher used this documentary technique in order to conduct and get secondary data.

### ***Interview guide***

According to Kendall (2012), interview is a conversation from which the researcher tries to get information to the interviewees. Qualitative questions were asked in relation with the research objectives and this helped the researcher to get direct information from respondents; therefore, this technique allowed the researcher to collect information through oral communication with selected employees of Masaka Hospital.

### **Validity and reliability of the instruments**

Pilot studies allowed the researcher to identify potential problems in the proposed study. A pilot study is the process of carrying out a preliminary study, going through the entire research procedure with a small sample of questionnaire. The testing of data was conducted in order to respondents during one week before to test the reliability and validity of the questionnaire. The aims are to test whether the designed questions are logical and contextual, if questions are

clear and easy to understand, whether the stated responses are exhaustive and how long it takes to complete the questions.

Therefore, the pre-test also allowed the researcher to check on whether the collected data can easily be processed and analyzed. Any question which is found ambiguous or interpreted differently during the pre-testing is rephrased so that it can have the same meaning to all respondents.

### Measurement of variables

In order to make effective measurement of variables; it is required to present the regression analysis model that researcher will use by calculating; analyzing and interpreting the relationship among variables through the collected data, as follows:

The procurement ethics (or **PET**); the electronic procurement (or **ELEP**) and the evaluation of purchasing (or **EVAP**); all as independent variables.

The organizational performance (or **OP**) as dependent variable

$\beta_0$  is constant and  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are parameters of equation model

$\epsilon_t$  is the error term of equation model

These were specifically stated as simple regression model that is evaluated and is represented as follows:

$Y(\text{organizational performance}) = \beta_0 + \beta_1(\text{procurement ethics}) + \beta_2(\text{electronic procurement}) + \beta_3(\text{Evaluation of purchasing}) + \epsilon_t$ .

$\text{Log OP} = \beta_0 + \beta_1 \text{LogPET}_{t1} + \beta_2 \text{LogELEP}_{t2} + \beta_3 \text{LogEVAP}_{t3} + \epsilon_t$ ;

Then the above equation is constructed from generated model set as well as the following:

$Y = \beta_0 + \beta_1 X_{it1} + \beta_2 X_{iit2} + \beta_3 X_{iiit3} + \epsilon_t$

And/ or

$\text{LogY} = \beta_0 + \beta_1 \text{LogX}_{it1} + \beta_2 \text{LogX}_{iit2} + \beta_3 \text{LogX}_{iiit3} + \epsilon_t$ .

Therefore, the above equation model provides the findings in figures as statistical results which were interpreted by basing on the regression analysis, with these following important coefficients:

Sig(P-Value) is significance probability value

$R^2$  is Regression Squared

$AR^2$  is Regression Squared Adjusted

Mean of findings among variables

Std Deviation and

ANOVA is Analysis of Variance

Table 2: ANOVA table

EVALUATION OF MEAN	
Range	Interpretation of the mean
[1-1.8 [	Very weak
[1.8-2.6 [	Weak
[2.6-3.4 [	Neutral
[3.4-4.2 [	Strong
[4.3-5 ]	Very strong
EVALUATION OF STANDARD DEVIATION-CORRELATION	
Scales	Interpretation of Scales
[-1.00 - 0.00 [	Negative correlation
[0.00 - 0.25 [	Positive and very low correlation
[0.25 - 0.50 [	Positive and low correlation
[0.50 - 0.75 [	Positive and high correlation
[0.75 - 1.00]	Positive and very high correlation

Note: Constructed basing on regression models' interpretations.

### Data processing and analysis

Normally, data that were collected from respondents were in a row form, which are easy to interpret and analyze for conclusions. Data processing was used to transform the respondent's views into meaningful test. On this note, editing, coding and tabulating of data were applied in order to be able to handle it easily.

#### *Editing*

Mbaaga (2009) defined editing as the process whereby errors in completed interview, schedule and the mail questions are identified whenever possible. For some unclear responses, the researcher has to go back to the respondents so as to make them clarify their responses.

#### *Coding*

According to Kakooza (2011), coding refers to the assigning of symbol or a number to a response for identification purpose. This was used in order to summarize data by classifying different responses, which were made into categories for easy interpretation and analysis.

#### *Tabulation*

Frequency distribution of tables was used after editing and coding of data. Tables were constructed according to the main themes in the questionnaire to summarize all the findings of the study.

## **Ethical considerations**

In conducting the research, there are some ethics that were considered, the adherence to ethical consideration helped the researcher to have smooth process in data collection. In conducting this research, the researcher considered the ethics in order to establish rapport with the respondents and there is information of consent in doing research, the researcher has gotten permission from the respondents to participate in the research. The researcher requested the organization management in order to allow their members to participate in the interview which required authority letter. Confidentiality and privacy are the key issues to be observed where researcher observed the respondents confidentiality during the interviewing process. Researcher allowed the respondents to be free when collecting the data, mentioning names might look like coercing the respondents are avoided.

## **Limitations of the study**

When carrying out the research, researcher anticipates various challenges relates to the nature and attitude of respondents and the nature of the study itself. For this research, the researcher anticipates the following challenges: Respondents might be mistrustful of researcher who may be carrying out commercial research under the cover of academic research and therefore doubt the purpose the researcher thinking that it is not academic. However, the researcher make through explanation and show them academic documents and then convince respondents beyond doubt that the research is purely academic until they give the required data. Because some respondents being donors and confronted with the truth they know of which they don't want to reveal due to their national interest it was difficult to have interviews with the development partners. The researcher therefore used their websites to have data that would be verified from the respondents on recipient side. The researcher anticipates a situation where some respondents were busy. This made the researcher to use interviews that take short time and making of specific appointments. The required literature was not be enough in UoK and moving to various libraries, book centers and internet could solve this.

## **RESEARCH FINDINGS**

### **Demographic profile of respondents**

This study concerned 67 respondents who were supposed to respond on the effects of procurement process on the performance of public hospital in Rwanda, with the case study of Masaka Hospital. The demographic profile of the respondents covers their gender, age, marital status, education level, as follows:

### ***Gender of respondents***

The following table discusses the distribution of respondents by gender, where the table indicates how Masaka Hospital has respected and made in action the government policy related to the gender policy implementation:

Table 3: Distribution of respondents by gender

<b>Gender of respondents</b>	<b>Number of respondents</b>	<b>Percentages</b>
<b>Male</b>	39	58.2%
<b>Female</b>	28	41.79%
<b>Total</b>	67	100%

According to table above that generated of respondents according to their gender (sex) where in Masaka Hospital, the male gender is represented by 39 respondents respected to 58.2% and then female gender is generated to 28 respondents as respected by 41.79% of all respondents. This indicates that the employees of Masaka Hospital work together for achieving goals even if the male gender dominated the female all are working together as a team in procurement ethics; electronic procurement and evaluation of purchasing and performance of Masaka Hospital in general.

### ***Education level of respondents***

The following table analyzes the education level of respondents, where this table shows how in Masaka Hospital, the respondents present the good understandings of what they work daily according to their education levels as follows:

Table 4: Distribution of respondents by education level

<b>Education of respondents</b>	<b>Number of respondents</b>	<b>Percentages</b>
<b>Bachelor's degree</b>	55	82.08%
<b>Masters' degree</b>	12	17.91%
<b>Total</b>	67	100 %

According to table above that shows the education level of respondents, where in Masaka Hospital, the masters' level are presented by 12 respondents of all participants respected to 17.91%, and the university level means as bachelor's degree in different domains of study presented 55 respondents respected to 82.08% of all respondents. Since the majority of the respondents have the bachelor's level and this implies that the respondents are significantly educational qualified in implementation of procurement ethics; electronic procurement and evaluation of purchasing and their responses were relied.



### ***Marital status of respondents***

Table 5: Distribution of respondents by marital status

<b>Marital status of respondents</b>	<b>Number of respondents</b>	<b>Percentages</b>
<b>Single</b>	28	41.79%
<b>Married</b>	31	46.26%
<b>Divorced</b>	6	8.95%
<b>widowers</b>	2	2.98%
<b>Total</b>	67	100%

According to table above that shows the marital status in Masaka Hospital, where the requested respondents are classed according to their marital status by where 28 respondents among them respected by 41.79% of all respondents are single, where 46.26% respected by 31 respondents as employees of Masaka Hospital are just married, and then 6 respondents esteemed by 8.95% and 2 respondents respected by 2.98% are divorced and widowers respectively; therefore this indicates that in Masaka Hospital the married respondents dominate others and then this means that they are ready to work carefully on the performance of Masaka Hospital and in different activities through the implementation of procurement ethics; electronic procurement and evaluation of purchasing.

### ***Age of respondents***

The following table shows the age of respondents, where this table shows the maturity of respondents thus they provide the specific and positive harvest:

Table 6: Distribution of respondents by age

<b>Age of respondents</b>	<b>Number of respondents</b>	<b>Percentages</b>
<b>21-30</b>	24	35.82%
<b>31-40</b>	38	56.71%
<b>41-50</b>	5	7.46%
<b>Total</b>	67	100%

According to table above that shows the age of respondents in Masaka Hospital where 24 respondents are between 21-30 years old and respected by 35.82% of all respondents and 38 employees are between 31-40 years old respected by 56.71% of all respondents, where only 5 respondents are between 41-50 years old respected by 7.46% of all respondents. Therefore, this indicates that the employees of Masaka Hospital are matured enough and they are able to give the meaningful information required in this research and this helped the researcher in

finding the data related to the implementation of procurement ethics; electronic procurement and evaluation of purchasing and the performance of Masaka Hospital.

### Findings for objectives

This section helps in answering the questions of the research concerning to the implementation of procurement ethics; electronic procurement; evaluation of purchasing those lead the performance of Masaka Hospital; and then the questions deal with the perceptions of the surveyed respondents on the designed questions; hence the results (findings) are documented in the following tables:

#### *The effects of procurement ethics on performance of Masaka Hospital*

The following table 7 presents the perceptions of respondents related to the first research objective by showing the factors that determine the effects of procurement ethics on performance of Masaka Hospital:

Table 7: The effects of procurement ethics on performance of Masaka Hospital

Regression equation

$$\text{Log OP} = -6.681 + 0.266\text{PET}_{t1} + \varepsilon_t;$$

Considering other variables stay constant then; the change of one percent (1%) of procurement ethics leads to 26.6% change of performance of Masaka Hospital;

Views of respondents	Mean		Std Deviation	
	Statistical range	Results of the mean	Statistical Scales	Results of Std Deviation
Through procurement ethics; the evaluation of purchasing management assesses performance of Masaka Hospital	4.821	Very strong	.942	Positive and very high correlation
Through procurement ethics; the electronic procurement assesses performance of Masaka Hospital	4.875	Very strong	.967	Positive and very high correlation
Through procurement ethics; the competitive prices assesses performance of Masaka Hospital	4.843	Very strong	.954	Positive and very high correlation
<b>Overall of mean</b>	4.856	Very strong	-----	-----

The table 7 shows the results about 3 items that were assessed about effects of procurement ethics on performance of Masaka Hospital; where the results showed an overall very strong mean of 4.856 which prove that procurement ethics provided by Masaka Hospital is very strong. The first item showed that through procurement ethics; the evaluation of purchasing management assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.821 with positive and very high correlational standard deviation of .942; the second item showed that through procurement ethics; the electronic procurement assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.875 with positive and very high correlation standard deviation of .967; the third item showed that through procurement ethics; the competitive prices assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.843 with positive and very high correlational of standard deviation of .954. Therefore, this means that the majority of respondents strongly agreed and in harmony that all above mentioned items are key components of procurement ethics applied in Masaka Hospital.

Therefore, as revealed by the majority of respondents as employees of Masaka Hospital, they provided testimonies by saying that: *“in Masaka Hospital, the procurement ethics provide the form of applied ethics or professional ethics, that examines ethical principles and moral or ethical problems that can arise in a procurement environment. Procurement ethics apply to all aspects of procurement conduct and are relevant to the conduct of individuals and entire organizations. These procuring ethics originate from individuals, organizational statements or from the legal system. These norms, values, ethical, and unethical practices are the principles that guide a procurement. They help the procurement to maintain a better connection with their stakeholders. Procurement ethics refers to contemporary organizational standards, principles, sets of values and norms that govern the actions and behavior of an individual in the procurement organization. Procurement ethics have two dimensions, normative procurement ethics or descriptive procurement ethics. As a corporate practice and a career specialization, the field is primarily normative”*.

### **The effects of electronic procurement on performance of Masaka Hospital**

The following table 8 provides the perceptions of respondents related to the second research objective by showing the factors that assess the effects of electronic procurement on performance of Masaka Hospital:

Table 8: The effects of electronic procurement on performance of Masaka Hospital

Regression equation

$$\text{Log OP} = -6.681 + 0.224\text{ELEP}_{t1} + \varepsilon_t;$$

Considering other variables stay constant then; the change of one percent (1%) of electronic procurement leads to 22.4% change of performance of Masaka Hospital;

Views of respondents	Mean		Std Deviation	
	Statistical range	Results of the mean	Statistical Scales	Results of Std Deviation
Through electronic procurement; technological innovation determines performance of Masaka Hospital	4.57	Very strong	.923343	Positive and very high correlation
Through electronic procurement; modern resources determine performance of Masaka Hospital	4.79	Very strong	.956543	Positive and very high correlation
Through electronic procurement; skilled employees determine performance of Masaka Hospital	4.66	Very strong	.953768	Positive and very high correlation
<b>Overall of mean</b>	4.634	Very strong	-----	-----

The table 8 assesses to the effects of electronic procurement on performance of Masaka Hospital. In general, the majority of employees have confirmed as it approved by an overall tend to strong with mean of 4.634. Therefore, the first item through electronic procurement; technological innovation determines performance of Masaka Hospital presented with a mean of 4.57 (strongly agreed of respondents) and standard deviation of .923343 recognized as positive and very high correlation. The second item through electronic procurement; modern resources determine performance of Masaka Hospital presented with a mean of 4.79 (strongly agreed of respondents) and standard deviation of .956543 recognized as positive and very high correlation. The third item through electronic procurement; skilled employees determine performance of Masaka Hospital presented with a mean of 4.66 (strongly agreed of respondents) and standard deviation of .953768 recognized as positive and very high correlation.

Therefore, as revealed by the majority of respondents as employees of Masaka Hospital, provided testimonies by saying that: *“in Masaka Hospital, E-procurement practices refer to the use of computer-internet based system to carry out individual or groups of the procurement*

process, including search, sourcing, negotiation, ordering, receipt, and post-purchase review. Masaka Hospital describes three types of e-procurement practices systems which are buyer e-procurement practices systems; seller e-procurement practices systems; and online intermediaries. There are various forms of e-procurement practices that concentrate on one or many stages of the procurement process, such as e-tendering, e-marketplace, e-auction/reverse auction, and e-catalogue. The purchasing accounts for the majority of organizational spending, as such, the advent of web-based electronic procurement has been heralded as a 'revolution' because of its potential to reduce the total cost of acquisition. It is also expected to impact on the nature of supplier governance, either reinforcing market-based relationships or encouraging virtual hierarchies”.

### The effects of evaluation of purchasing on performance of Masaka Hospital

The following table 9 provides the opinions of respondents related to the third research objective by showing the factors that analyze the effects of evaluation of purchasing on performance of Masaka Hospital:

Table 9: The effects of evaluation of purchasing on performance of Masaka Hospital  
Regression equation

Based on the model coefficient result the model becomes:

$$\text{Log OP} = -6.681 + 0.226\text{EVAP}_{t_1} + \varepsilon_i;$$

Considering other variables stay constant then; the change of one percent (1%) of evaluation of purchasing leads to 22.6% change of performance of Masaka Hospital.

Views of respondents	Mean		Std Deviation	
	Statistical range	Results of the mean	Statistical Scales	Results of Std Deviation
Through evaluation of purchasing; procurement ethics analyze performance of Masaka Hospital	4.624	Very strong	.762234	Positive and very high correlation
Through evaluation of purchasing; supplier relationships analyzes performance of Masaka Hospital	4.852	Very strong	.828543	Positive and high correlation
Through evaluation of purchasing; contract management analyzes performance of Masaka Hospital	4.713	Very strong	.791545	Positive and very high correlation
<b>Overall of mean</b>	4.726	Very strong	-----	-----

The table 9 shows the results about 3 items that were assessed about the effects of evaluation of purchasing on performance of Masaka Hospital. The results showed an overall strong mean of 4.726 saying that evaluation of purchasing provided by Masaka Hospital, are very strong. The first article as through evaluation of purchasing; procurement ethics analyze performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.624 then for positive and very high correlation with standard deviation of .762234; the second article showed that through evaluation of purchasing; supplier relationships analyzes performance of Masaka Hospital, and it is approved by respondents that are strongly agreed with mean of 4.852 with positive and very high correlation of standard deviation as .828543; the third article as through evaluation of purchasing; contract management analyzes performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.713 esteemed as positive and very correlation standard deviation of .791545.

Therefore, as revealed by the majority of respondents as employees of Masaka Hospital, they provided testimonies by saying that: *“in Masaka Hospital, the evaluation of purchasing and supplier appraisal is terms used in business and refers to the process of evaluating and approving potential suppliers by quantitative assessment. The aim of the process is to ensure a portfolio of best-in-class suppliers is available for use. Evaluation of purchasing can also be applied to current suppliers in order to measure and monitor their performance for the purposes of ensuring contract compliance, reducing costs, mitigating risk and driving continuous improvement. Evaluation of purchasing and take-on is a continual process within purchasing departments, and forms part of the pre-qualification step within the purchasing process, although in many organizations it includes the participation and input of other departments and stakeholders. Most experts or firms experienced in collecting evaluation of purchasing information prefer doing so using five-step processes for determining which to approve”*.

### ***The level of organizational performance in Masaka Hospital***

The following table 10 offers the attitudes of respondents related to the determinants that provide the level of organizational performance in Masaka Hospital:

Table 10: The level of organizational performance in Masaka Hospital

Views of respondents	Mean		Std Deviation	
	Statistical range	Results of the mean	Statistical Scales	Results of Std Deviation
The objectives achievement find out the level of organizational performance in Masaka Hospital	4.31	Very strong	.927672	Positive and very high correlation
The financial income find out the level of organizational performance in Masaka Hospital	4.03	Strong	.703962	Positive and high correlation
The satisfaction of stakeholder finds out the level of organizational performance in Masaka Hospital	4.06	Strong	.708724	Positive and high correlation
The innovation of activities and services find out the level of organizational performance in Masaka Hospital	4.852	Very strong	.828543	Positive and high correlation
<b>Overall of mean</b>	<b>4.025</b>	Strong	-----	-----

The table 10 shows the results about three critiques that were studied about the level of organizational performance in Masaka Hospital. The results showed an overall strong mean of 4.025 that provides the strong approximation. The first spot showed that the objectives achievement find out the level of organizational performance in Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.31 respected by positive with very high correlation standard deviation of .927672; the second item showed that the financial income find out the level of organizational performance in Masaka Hospital, and it proves that respondents are agreed with mean of 4.03 respected by positive and high correlation standard deviation of .703962; the third item showed that the satisfaction of stakeholder finds out the level of organizational performance in Masaka Hospital, and it proves that respondents are agreed with mean of 4.06 and it is respected by positive and high correlation as standard deviation of .708724. The fourth item showed that the innovation of activities and services find out the level of organizational performance in Masaka Hospital and it proves that respondents are strongly

agreed with mean of 4.852 and it is respected by positive and very high correlation as standard deviation of .828543.

### Hypotheses testing

Estimated research hypotheses

$H_0$ : There is no relationship between procurement process and performance of Masaka Hospital.

$H_1$ : There is significant relationship between procurement process and performance of Masaka Hospital.

Thus, the alternative hypothesis is composed by the following assumptions:

$H_1$ : Procurement ethics have statistical effects on performance of Masaka Hospital.

$H_2$ : Electronic procurement has statistical effects of on performance of Masaka Hospital.

$H_3$ : Evaluation of purchasing has statistical effects on performance of Masaka Hospital.

Table 11: Presentation of regression summary

Model	Unstandardized Coefficients		Standardized Coefficients	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta	Lower Bound	Upper Bound	Tolerance/Sig.	F
Constant	-6.681	.000	-----	-6.681	-6.681	-----	-----
Procurement ethics	.266	.000	.303	.266	.266	.183	5.460
1 Electronic procurement	.224	.000	.275	12.380	12.380	.197	5.064
Evaluation of purchasing	.226	.000	.302	.226	.226	.293	5.311

Dependent variable: performance of Masaka Hospital.

Table 12: ANOVA table

Model	Sum of Squares	Df	Mean Square	R-Squared	Adjusted R-Squared	F	Sig.
1 Regression	0.0873	4	4.35025	<b>0.971</b>	<b>0.969</b>	.1045274	.000000
Residual	.000	0	-----	-----	-----	-----	-----
Total	0.0873	4	-----	-----	-----	-----	-----

a. Predictors: (Constant), procurement ethics; electronic procurement; evaluation of purchasing.

b. Dependent Variable: performance of Masaka Hospital



For testing whether variables are correlated or not; it's better to find the division and variation of Sum of Squares which is equal to 8.73%. Therefore, the variables are significantly correlated at regressive level. Based on the model coefficient result the model becomes:

$$\text{Log OP} = -6.681 + 0.266\text{PET}_{t1} + 0.224\text{ELEP}_{t2} + 0.226\text{EVAP}_{t3} + \varepsilon_t;$$

Considering other variables stay constant then

The change of one percent (1%) of procurement ethics leads to 26.6% change of performance of Masaka Hospital;

The change of one percent (1%) of electronic procurement leads to 22.4% change of performance of Masaka Hospital;

The change of one percent (1%) of evaluation of purchasing leads to 22.6% change of performance of Masaka Hospital;

**R-squared:  $R^2 = 0.971$**

**Adjusted R-squared: Adjusted  $R^2 = 0.969$**

$R^2 = 0.971$  and Adjusted  $R^2 = 0.969$ , show the goodness of fit of the estimated model. Up to 96.9% of long-run appreciation in performance of Masaka Hospital is influenced by changes in procurement ethics; electronic procurement; evaluation of purchasing as implemented by Masaka Hospital.

### Relationship between procurement process and performance of Masaka Hospital

The purpose of this section is to find if there is a relationship between procurement process and performance of Masaka Hospital where the statistical (numeric) data allow researcher to highlight the direct relationship between variables, as follows:

Table 13: The correlation between procurement process and performance of Masaka Hospital

Spearman Coefficient correlation	Procurement process	Performance of Masaka Hospital adoption
Correlation Coefficient	1.000	.957*
Sig. (2-tailed)	.....	.000
N	67	67
Correlation Coefficient	.957*	1.000
Sig. (2-tailed)	.000	.....
N	<b>67</b>	<b>67</b>

#### Legend:

- 1) [-1.00 - 0.00 [ : Negative correlation;
- 2) [0.00 - 0.25 [ : Positive and very low correlation;
- 3) [0.25 - 0.50 [ : Positive and low correlation;
- 4) [0.50 - 0.75 [ : Positive and high correlation and
- 5) [0.75 - 1.00] : Positive and very high correlation.

The variation of Spearman Coefficient correlation is between -1 and 1. Spearman Coefficient correlation is significance when it is equal or greater than 0.01. According to the research, the correlation of 0.957(95.7%) is located in the interval [0.75 - 1.00] categorized as positive and very high correlation. As the significant level is at 0.01 (1%), the p-value of 0.000 (i.e. 0.0%) is less than 1%. This leads to confirm that there is significant relationship between procurement process and performance of Masaka Hospital.

## **SUMMARY OF MAJOR FINDINGS**

### **The effects of procurement ethics on performance of Masaka Hospital**

The table 7 shows the results about 3 items that were assessed about effects of procurement ethics on performance of Masaka Hospital; where the results showed an overall very strong mean of 4.856 which prove that procurement ethics provided by Masaka Hospital is very strong. The first item showed that through procurement ethics; the evaluation of purchasing management assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.821 with positive and very high correlational standard deviation of .942; the second item showed that through procurement ethics; the electronic procurement assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.875 with positive and very high correlation standard deviation of .967; the third item showed that through procurement ethics; the competitive prices assesses performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.843 with positive and very high correlational of standard deviation of .954. Therefore, this means that the majority of respondents strongly agreed and in harmony that all above mentioned items are key components of procurement ethics applied in Masaka Hospital.

### **The effects of electronic procurement on performance of Masaka Hospital**

The table 8 assesses to the effects of electronic procurement on performance of Masaka Hospital. In general, the majority of employees have confirmed as it approved by an overall tend to strong with mean of 4.634. Therefore, the first item through electronic procurement; technological innovation determines performance of Masaka Hospital presented with a mean of 4.57 (strongly agreed of respondents) and standard deviation of .923343 recognized as positive and very high correlation. The second item through electronic procurement; modern resources determine performance of Masaka Hospital presented with a mean of 4.79 (strongly agreed of respondents) and standard deviation of .956543 recognized as positive and very high correlation. The third item through electronic procurement; skilled employees determine performance of Masaka Hospital presented with a mean of 4.66 (strongly agreed of

respondents) and standard deviation of .953768 recognized as positive and very high correlation.

### **The effects of evaluation of purchasing towards performance of Masaka Hospital**

The table 9 shows the results about 3 items that were assessed about the effects of evaluation of purchasing on performance of Masaka Hospital. The results showed an overall strong mean of 4.726 saying that evaluation of purchasing provided by Masaka Hospital, are very strong. The first article as through evaluation of purchasing; procurement ethics analyze performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.624 then for positive and very high correlation with standard deviation of .762234; the second article showed that through evaluation of purchasing; supplier relationships analyzes performance of Masaka Hospital, and it is approved by respondents that are strongly agreed with mean of 4.852 with positive and very high correlation of standard deviation as .828543; the third article as through evaluation of purchasing; contract management analyzes performance of Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.713 esteemed as positive and very correlation standard deviation of .791545.

### **CONCLUSION**

The table 10 shows the results about three critiques that were studied about the level of organizational performance in Masaka Hospital. The results showed an overall strong mean of 4.025 that provides the strong approximation. The first spot showed that the objectives achievement find out the level of organizational performance in Masaka Hospital, and it proves that respondents are strongly agreed with mean of 4.31 respected by positive with very high correlation standard deviation of .927672; the second item showed that at Masaka Hospital, financial income find out the level of organizational performance in Masaka Hospital, and it proves that respondents are agreed with mean of 4.03 respected by positive and high correlation standard deviation of .703962; the third item showed that at Masaka Hospital, satisfaction of stakeholder finds out the level of organizational performance in Masaka Hospital, and it proves that respondents are agreed with mean of 4.06 and it is respected by positive and high correlation as standard deviation of .708724. The fourth item showed that at Masaka Hospital, innovation of activities and services find out the level of organizational performance in Masaka Hospital, and it proves that respondents are agreed with mean of 4.852 and it is respected by positive and high correlation as standard deviation .828543.

For testing whether variables are correlated or not; it's better to find the division and variation of Sum of Squares which is equal to 8.73%. Therefore, the variables are significantly

correlated at regressive level. The findings reveal that in long run, the performance of Masaka Hospital is explained by effective probabilities of procurement ethics; of electronic procurement; of evaluation of purchasing that all are less than 10%. Basing on simple regression of each factor influences the performance of Masaka Hospital

The  $R^2 = 0.971$  and Adjusted  $R^2 = 0.969$ , show the goodness of fit of the estimated model. Up to 97.1% of long-run appreciation in performance of Masaka Hospital is influenced by changes in procurement ethics; electronic procurement; evaluation of purchasing as implemented by Masaka Hospital. Therefore, the researcher can conclude by saying that the research hypotheses including: “H<sub>1</sub>: procurement ethics has statistical effects towards performance of Masaka Hospital; H<sub>2</sub>: electronic procurement has statistical effects towards performance of Masaka Hospital and H<sub>3</sub>: evaluation of purchasing has statistical effects towards performance of Masaka Hospital”; all were tested; verified and then they are confirmed referring to the statistical (regression analysis) findings.

The variation of Spearman Coefficient correlation is between -1 and 1. Spearman Coefficient correlation is significance when it is equal or greater than 0.01. According to the research, the correlation of 0.957(95.7%) is located in the interval [0.75 - 1.00] categorized as positive and very high correlation. As the significant level is at 0.01 (1%), the p-value of 0.000 (i.e. 0.0%) is less than 1%. This leads to confirm that there is significant relationship between procurement process and performance of Masaka Hospital.

## **SUGGESTIONS**

### **Suggestions to Masaka Hospital**

In order to make strong procurement process, the researcher suggests to Masaka Hospital to work with the partners constantly to improve their services and to provide the outputs that wanted on time so that they are always more performance by basing on the findings obtained on the field. The leaders of Masaka Hospital, who have particularly, the procurement activities into their attribution and responsibilities, are suggested:

1. To allow Masaka Hospital actors learn from each other’s experiences, building on expertise and knowledge;
2. To ensure the security in procurement process services as most if not all users expect it;
3. To reveal Masaka Hospital mistakes and offers paths for learning and improvements;
4. To provides a way to assess the financial crucial link between implementers and beneficiaries on the ground and decision-makers;
5. To sensitize partners on usage of procurement process services by conducting public awareness programs to improve their knowledge.

## Suggestions to further researchers

The current researcher would like to provide the partial suggestions regarded to further researchers who can be willing to carry out their researches, thus they are suggested to take reference to this research project in order to improve their researches and information as findings. Therefore, the future researchers are suggested to work on the following research topics:

1. The impact of procurement ethics towards performance of public hospitals in Rwanda.
2. The effects of electronic procurement towards performance of public hospitals in Rwanda.
3. The influence of evaluation of purchasing towards performance of public hospitals in Rwanda.

## REFERENCES

- Asumba P., (2010). *Purchasing Performance: Measuring, Marketing, and Selling the Purchasing*
- Bailey M., (2014). *Qualitative Research: Issues of Theory, Method and Practice*, Third Edition. London, Thousand Oaks, New Delhi, Singapore: Sage Publications
- Burnes O., (2018). *Supplier evaluation and performance excellence: a guide to meaningful metrics and successful results*. J. Ross Publishing.
- Chinoio W., (2010). *Purchasing and Supply Chain Management*. Cengage Learning.
- Christiansen A. and Maltz E. (2012). *Data engineering issues in e-commerce and services*.
- Churchill H., (2017). *Introduction to the Philosophy of Methodology*. London: Sage Publications.
- Donavon Favre N., (2013). *Using effective supplier appraisal techniques to improve the supply chain*.
- Duttolph S., (2011). *Fundamentals of Methodology*", a series of papers On the Social Science Research Network (SSRN).
- Eadie R., (2017). *Retail Product Management: Buying and Merchandising*.
- Felecia D., (2010). *Consumer Behavior*, 1st ed. New York: Holt.
- Gatonye P., (2015). *Marketing Communications: Theory and Applications*, Pearson Australia, 2005, p. 24.
- Health E. and Norman P., (2004). *Marketing Management. A South Asian Perspective, but China and Japan also contribute* 13th ed. India: Prentice Hall, 2009.
- Kakooza D., (2011). *Research Methods in Anthropology: Qualitative and quantitative methods*. 3rd edition. Alta Mira Press, Walnut Creek, California.
- Kalakota P. and Whinston A., (2016). "Taxonomy of Buying Decision Approaches". *Journal of Marketing*. American Marketing Association.
- Kendall R., (2012). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, California: Sage Publications.
- Kimtai S., (2010). "An Assessment of the Myers-Briggs Type Indicator." *Journal of Personality Assessment*.
- Krawiecet T., (2010). "The Effects of Cognitive Style Diversity on Decision-Making Dyads: An Empirical Analysis in the Context of a Complex Task." *Behavioral Research in Accounting*. 15 (2003): 39-62.
- Langevoort Y., (2012). "The Influence of Cognitive-Based Group Composition on Decision-Making Process and Outcome." *Journal of Management Studies*.
- Lardenoije U., Van Raaij Q., and Van Weele W., (2005). *Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice* (5th ed.). Andover: Cengage Learning.
- Lee S., (2017). *A Theory of Incentives in Procurement and Regulation*. MIT Press.

- Magness B., (2006). Contracts, relationships and integration: Towards a model of the procurement of complex performance. *International Journal of Procurement Management*.
- Makabira L., (2014). CIPS in partnership with Profex Publishing, *Procurement and Supply Operations*, 2012, revised 2016, pp. 1-2.
- Mbaaga M., (2009). "Combining qualitative and quantitative research in developing 'indicators' of research". *International Journal of Social Research Methodology*.
- Mensah K., (2013). *Contract Administration*, Chartered Institute of Procurement & Supply, p. 114.
- Murray R., (2018). The understanding of current business-to-business e-procurement practices by describing the success factors and challenges to its implementation in the corporate setting. *Nairobi-Kenya*.
- Nelson K., (2011). Investigating Search Costs and Coordination Costs in Electronic Markets: A Transaction Costs Economics Perspective, in: *Electronic Markets*, 15, 3, 2005, pp. 213–224.
- Odhiambo Z. and Kamau U., (2012). *Strategic Sourcing in the New Economy: Harnessing the Potential of Sourcing Business Models for Modern Procurement* (New York: Palgrave Macmillan).
- Olsen L. and Ellram C., (2017). European Bank for reconstruction and development. Are you ready for eProcurement?: Guide to Electronic Procurement Reform.
- Osmonbekov S., (2012). Bids and Tenders [online]. 2018 [cit. 2019-04-22]. Retrieved from <http://www.tenderbidding.com/lakshwadeep-e-proc-and-nic.php>.
- Paige Y., (2012). *The Critical Path Method of Modeling Research Execution Strategy*. ICS-Publications.
- Peters T. and Hogenson S., (2015). "The Power to Procure: A Look inside the City of Austin Procurement Program". Retrieved 26 October 2016.
- Robert G., (2014). "The Concept of research methodology". London and New York: Routledge.
- Robert K., (2014). "Principles of Research methodology". (2nd Edition) Europe Prentice Hall Edition.
- RPPA, Annual reports of 2017 and 2018.
- Telgen S., Zomer A., and de Boer, (1997). E-Ordering and E-Informing on Supply Chain Performance in Retail Marketing Outlets in Kenya. *Journal of Marketing and Consumer Research*.
- Thai K., (2011). Development and validation of a measurement instrument for studying supply chain management practices, *Journal of Operations Management* 23(6).
- Weele Van C. (2010). Understanding supply chain management: critical research and a theoretical framework, *International Journal of Production Research*, Vol. 42, No. 1, 2004, pp. 131-163.
- Wilmshurst A. and Frost H., (2000). "E-Procurement in Hospital Pharmacies: An Exploratory Multi-Case Study from Switzerland". *Journal of Theoretical and Applied Electronic Commerce Research*.
- World Bank, Annual reports of 2012.
- Yamen T., (1967). *Quantitative and Qualitative Research Methods for the Social Sciences*. Seventh Edition. Boston MA: Pearson Education Inc.