

**TEACHERS' LEVEL OF SATISFACTION WITH CHANGES RESULTING  
FROM REENGINEERING OF SERVICES BY TEACHERS SERVICE  
COMMISSION  
A CASE STUDY OF NAIROBI PROVINCE SECONDARY SCHOOLS**

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**BY**

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**A management project submitted in partial fulfillment for the requirements  
for the degree of Master of Business Administration (MBA), Faculty of  
Commerce, University of Nairobi.**

**September 2003**

# DECLARATION

## DEDICATION

This management project is my original work and has not been presented for a degree in any other university.

EUCARETH NYABOKE ONGECHI

Who

Has always been there for me

SIGNED: Jed DATE: 3-11-03

**JUDITH .B. MAIRURA**

To my father

ISAIAH ONGECHI ORIKU

Who

Taught me the value of education

This management project has been submitted for examination with my approval as university supervisor.

"You started it all several years ago.

Thank you"

SIGNED: Peter K'Obonyo DATE: 3-11-03

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## ACKNOWLEDGEMENTS

### DEDICATION

I am deeply indebted to the Lord who makes all things possible. It is by His grace that I have come to the completion of this programme.

To my mother **EUCABETH NYABOKE ONGECHI**

This project has been accomplished due to the encouragement, support and contribution from a number of people to whom I am deeply indebted. Special gratitude goes to

Who

Has always been there for me

valuable guidance and direction. He was always available for consultation and gave me inspiration that was unceasing. I truly feel indebted to him.

This study would not have been possible without the express support of my loving

family. My mother, Miriam, my father, Isaiah, Gloria Magoma, Zekia Kerubo and

To my father **ISAIAH ONGECHI ORIKU**

Craig Njiru, who believed in me, encouraged me and made it possible for me to

undertake this programme. You gave me emotional and spiritual support that enabled me

to bring my studies to a successful conclusion and for this, I am deeply grateful.

Who

Taught me the value of education

Special thanks also go to all MEds students, with whom we painstakingly toiled. Their encouragement and support was much needed and appreciated.

**“You started it all several years ago.**

**Thank you”**

A special thank you also goes to my sister Janet Keresuto, who typed the project with a lot of patience, diligence and co-operation.

To all my respondents, “I couldn't have done it without you.”

God bless you all.

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To all my respondents, **"I couldn't have done it without you."**

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## ABSTRACT

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*Few studies have examined how teachers in Kenya perceive service delivery by their employer, Teachers Service Commission. The primary purpose of this study was to establish teachers' level of satisfaction with changes resulting from reengineering of services by Teachers' Service Commission. A secondary purpose was to establish the extent to which teachers' overall levels of satisfaction were related to their personal characteristics and lastly determine the relationship of teachers' overall levels of satisfaction and these changes.*

*Data was obtained by means of a survey questionnaire that was issued to secondary school teachers in Nairobi Province. The response rate was 91.5% (137/150). The data was analyzed using descriptive statistics; comparison of means using t-tests, correlation analysis and multiple linear regressions to answer the research questions.*

*Majority of teachers (52 %) were moderately satisfied with changes at Teachers Service Commission. Moderate levels of satisfaction were associated with: (1) Procedures of serving teachers at TSC headquarter reception desk, (2) Computerization of work systems and (3) Establishment of Public Relations office. Teachers appeared to be highly dissatisfied with the recruitment of teachers by the Board of Governors and evaluation of teachers by head teachers.*

*The means calculated from the reported teachers' overall level of satisfaction were not statistically significantly different for (a) age, (b) gender, (c) qualifications and (d) years of service. The best resulting changes were those related to customer services at TSC headquarters. The change, "courtesy of employees at TSC headquarter reception desk" was the best predictor of teachers' overall levels of satisfaction and was strongly related to many other changes.*

*Recommendations for practice include suggestions that Teachers Service Commission service delivery systems be improved by directing their efforts to resulting changes bringing dissatisfaction, the major one being recruitment of teachers by Boards of Governors. Also suggested is the computerization of its work systems to agency and school levels. In future researchers may need to focus their attention on extending this study to include primary school teachers and other stakeholders in education sector across the country.*

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# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

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## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

The forces that operate to bring about change in organizations can be thought of as winds that are many and varied. They range from small breezes which merely disturb a few papers to mighty *elnino* which causes devastation to structures and operations causing consequent re-orientation of purpose and re-building .The pace and scale of the change demanded of organizations and those who work within them are enormous. With the information age, organizations are attempting to recreate themselves and move from the traditional structure to a dynamic new model where people can contribute their creativity, energy and foresight in return for being nurtured, developed and enthused (Senior 1997).

Organizations are seeking to obtain strategic advantage by redesigning the way they do business. A consensus that is emerging in the business world is that successful organizations will be those that embrace continuous change as a business paradigm. Such organizations are able to adapt to changes in the marketplace and to lead the market in directions optimal to the organizations goals by continually adapting their products, processes and internal structures to changes in the business environment (Rose and Lawton, 1999). This therefore calls for a more coordinated and fundamental approach to planning and design of business activities hence a change in the process.

Fuelled by the continuing demand for corporate transformation in a decade of unprecedented change, there has been an exponential increase in the number of publications dealing with organizational change and its impact on productivity and quality improvement. The most successful examples seem to be related with process-focused change, particularly found in the total quality management and re-engineering movements (Venkatraman, 1994).

A process that is describing the efforts in process improvements is Business Process Reengineering (BPR). BPR first came to prominence in 1990. Hammer and Champy (1993) noted that organizations conducted business in a certain way for many years. With the rapid and strong changes in the business environment, organizations have found themselves unable to cope with the new conditions. The major pressures for change are from, customers who know what they want, what they are willing to pay and how to get products and services on their own terms. Competition that is continuous with respect to price, quality, selection, service and promptness of delivery has intensified with the removal of trade barriers, international cooperation and technological innovations.

Reengineering business processes is now being offered as a paradigm for organizational change necessary in order to achieve the requisite flexibility and competitiveness of the networked organization (Hammer, 1990; Venkatraman, 1991). BPR can be conceived as an organizational initiative to streamline business processes by refocusing on how an organization operates. Keen, (1991) asserts that BPR tends to be radical in nature and strives for fundamental structural change. The breadth and depth of these changes make it imperative that BPR be planned and initiated at the strategic level by top management in order to enhance the likelihood of success. Organizational theorists propose that the organization of the future will be networked across functions and designed around business processes rather than functional hierarchies (Drucker, 1988; Norton et al 1989; Rockart and Short. 1989).

Reengineering requires committed and empowered employees, not simply to operate processes after they have been reengineered but also to reengineer them in the first place. This call requires altering the basic behaviors, attitudes and management expectation. With a clear vision of how things should work in the future, employees' satisfaction with the changes resulting from reengineering will considerably depend on how they have been helped to accept the change.

## 1.2 Management of the Teaching Profession in Kenya

The development of education in Kenya has been marked by various changes and challenges, and so is the impact this sector has had on national development. Kenya, like other developing countries, invests in education because of the belief that an educated, skilled labor force is a necessary condition for sustained economic growth in terms of its productivity (Meir, 1965). A guiding philosophy underlying education policy has been the commitment that every Kenyan has a right to education. Rising and demanding population coupled with reduced resources have placed extreme pressures on education services. The implementation of Education Sector Reforms is aimed at making education more relevant for national development. Education sector reforms are in line with the wider Public Sector Reform Programmes (SAPs) that seek to enhance the delivery of public services to Kenyans. These reforms have focused on the Ministry of Education and its field Networks, among them the Teaching service Rationalization.

Teacher management structures are critical in ensuring that the teaching profession is efficiently and effectively managed. The Teachers Service Commission established by an Act of Parliament (Cap212, 1967) streamlined the management of schools and tertiary institutions education teaching force by centralizing it in the commission. TSC major objective is to establish and maintain a teachers' service adequate to the needs of public schools in Kenya. In particular the functions of the commission include the registration, recruitment, deployment, remuneration, maintenance of standards of education and discipline of all teachers in public schools.

TSC handles the largest workforce in the civil service totaling 240,000 serving teachers with a current annual wage bill of Kenya shilling 44.4 billion. Previously, a centralized system of Teacher Management was perceived to be suitable in order to ensure that there was a fair and equitable distribution of teachers countrywide. Between 1967 and 1999, public schools grew from 6,501 to 20,202 while the teaching force grew from 39,725 at all levels to 247,143. The rapid expansion of education sector has however put the

teacher management system in focus. Various Commissions' reports on the education sector such as *Report of the National committee on Educational Objectives and policies* chaired by P.J. Gachathi (1976) and *Report of the Presidential Working Party on Education and Manpower Training for the Next Decade and Beyond* chaired by J.M. Kamunge (1988) indicate that the teacher management system in the country is not as effective and efficient.

Services at the TSC have been extremely poor and therefore attracting public wrath. Starting with delayed salaries, processing of pensions that would take years, discipline cases that took up to six years to be resolved, irregular promotions and claims of corruption (missing files) with the commission being ranked eleven (11) in a corruption index published April 2001 by Transparency International, a non-governmental watchdog on corruption (Teachers Image, 2nd Quarter 2002).

Realizing the need to raise its level of performance and productivity for quality service delivery, TSC reengineered its services in 2001. The major input in the re-engineering process was in the review of the TSC's existing systems, operations, processes and procedures. There has been a significant amount of re-structuring and re-organization, goals and objectives have been re-defined with clear service delivery mechanisms put in place. A detailed process analysis of the operations has been undertaken with a view of removing bottlenecks. The commission focus was to step up the internal and operational efficiency of the various departments and divisions. It has also strengthened a decentralized structure in which its agents perform more of its functions. Some of the functions now devolved to the agency level include teacher recruitment and selection as well as staff induction, discipline and grievance management (Operational manual on teacher management, 2002). The commission also made significant strides towards changing from manual work systems to the use of computers, as well as embracing new technologies. The general objective of the reengineering processes was to enhance the performance and efficiency of the commission by improving its processes and procedures in the delivery of services through a rationalized and restructured Teachers Service Commission and its agencies (Teachers Image, January 2002).

### 1.3 Statement Of The Problem

Within the last two decades, fundamental changes in the government policy framework and strategies have been made in the education sector. This includes financing and provision of education services and facilities, education system and structures (such as the implementation of the 8-4-4 system of education), enhancing equity and access to education and liberalization of education sector, which involved increased licensing of private teaching institutions at all levels.

Parents have increasingly become much more aware of the rights of their children. Furthermore, communities, due to their involvement in cost sharing of education services, are demanding a greater say in terms of how their schools are run, and how teachers perform. These changes have had a significant effect on the TSC, bringing challenges mainly in its performance as regards service delivery to teachers in particular. Given the size of the commission (a total of 300,000 clients to deal with), demand for services has equally grown with many and varied challenges.

Since 2001, TSC accepted and commenced a re-engineering process in order to raise its level of performance and productivity for quality service delivery. The situation of service delivery to teachers was then characterized by: long service process cycles, over centralization of teacher management functions, paper based manual procedures and numerous backlogs at various service areas. The major input in the re-engineering process at the TSC has been in the review of the existing systems, operations, processes and procedures (Image, January 2002)

Literature is rich in information on successful reengineering cases in the private sector than in the public sector. Measuring results of reengineering in the public sector is difficult since there is no precise yardstick. Therefore, operational excellence, which is the aim of reengineering, can be measured using customer satisfaction (Munyiri, 2000 and Atebe, 2001). Few studies or conceptual papers have been done or written on the satisfaction of employees with changes resulting from reengineering, more so in

government agencies. This constitutes a gap in knowledge. Specifically it is not clear whether the teachers are satisfied with the changes resulting from reengineering of services by the Teachers Service Commission (TSC). This therefore constitutes the research problem for the proposed study.

#### **1.4 Objectives Of The Study**

1. To establish teachers' level of satisfaction with changes resulting from reengineering of services by Teachers Service Commission.
2. To establish significant differences in teachers' levels of satisfaction with changes resulting from reengineering of services by TSC in terms of their personal characteristics.
3. To establish which changes resulting from reengineering of services by Teachers Service Commission are the major predictors of teachers' overall levels of satisfaction.

#### **1.5 Research Hypotheses**

1. Ho: There is a significant difference in the teachers' overall levels of satisfaction and their personal characteristics.
2. Ho: There is no linear relationship between teachers' overall level of satisfaction and changes at TSC.

#### **1.6 Importance Of The Study**

The purpose of the study is to establish the satisfaction of teachers towards changes resulting from reengineering of services at the TSC. This would contribute to the literature and research on teacher job satisfaction. It will also form an instant source of information for the following:

1. Teachers Service Commission. The findings of this study will provide useful information on teachers' levels of satisfaction with changes resulting from reengineering of services. The knowledge gained can be used to address the question of what reengineering has or has not achieved. Such knowledge can be used for effective

planning for further reengineering in order to make teachers more satisfied with services from TSC.

2.Academicians. The study hopes to stimulate interest in the relatively new field of reengineering while shedding light on the effect of reengineering on service process cycles.

3.Stakeholders in Education Sector. To appreciate the challenges TSC is facing after reengineering its services.

### **1.7 Organization of the Research Paper**

The research paper has five chapters whose contents are outlined below;

#### **Chapter one: Introduction**

This chapter contains the background of the study with emphasis on teacher management in Kenya, the statement of the problem, the objectives and the importance of the study.

#### **Chapter Two: Literature Review**

This chapter covers a review of the literature on Business Process Reengineering with a major focus on the reengineering process and change outcomes at Teachers Service Commission.

#### **Chapter Three: Research Methodology**

This chapter carries information on the research method used. It covers the research design, population of study, data collection, analysis and interpretation.

#### **Chapter Four: Results of the Study**

This chapter contains data analysis and research findings.

#### **Chapter Five: Discussion, Summary and Conclusions**

This chapter carries the synthesis of research findings, summary, conclusions, the limitations of the study and suggestions for further research.



## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Business Process Reengineering

Michael Hammer, a consultant and computer science professor at Massachusetts Institute of Technology, USA, first coined the term “business process re-engineering” or BPR in 1988. He urged managers to rethink of business processes rather than simply investing in huge amounts of Information Technology (IT) to automate them. In practice, this meant tightening processes and eliminating unnecessary and redundant steps rather than supporting the present process systems with complex IT systems.

Hammer and Champy (1993) define Business Process Reengineering as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed. This definition is associated with starting all over again, abandoning long established procedures and looking afresh at work.

Talwar (1993) puts BPR as changing mindset, attitudes and behaviors to allow the fundamental rethinking and redesign of business activities, structures and working relationships in order to maximize value-added and achieve radical and sustainable improvements in all aspects of business performance. This definition focuses on prerequisites of change management, people’s perceptions and willingness to be changed.

Manganelli and Klein (1994) view re-engineering as the rapid and redesign of strategic value-added processes and the systems, policies and organizational structures that support them, to optimize workflows and productivity in the organization. The main themes of these BPR definitions include aspects such as, its strategic, changes in culture, effects on structures and that its radical.

Davenport and Short (1990) define Business Process as “ a set of logically related tasks performed to achieve a defined business outcome”. They further define a process as “ a

structured, measured set of activities designed to produce a specified output for a particular customer or market". This implies a strong emphasis on how work is done within an organization. Processes have customers (internal and external) and they have cross-organizational boundaries. Process is generally identified in terms of beginning and end points, interfaces and organizational units involved, particularly the customer unit. Processes are defined using three dimensions: entities such as organizations, objects (physical or informational) and activities (managerial and operational).

### 2.1 Key Aspects Of Business Process Reengineering

There are widespread misconceptions of reengineering. Reengineering is not "downsizing" according to Hammer and Stanton (1995). They define reengineering as rethinking work from the ground up in order to eliminate work that is not necessary and to find better ways of doing what is supposed to be done. It is however true that in the process you may need fewer people. Reengineering is also not "restructuring" since reengineering is about how work is done and not how an organization is structured. Piper (1995) adds that reengineering is not "automation" since the focus of reengineering is the customer. Automation is a reengineering tool to help provide value to the customer.

This leads to many simultaneous changes, not only in organizational structures, but also in processes. An organization has four interrelated aspects. These are processes, which are the mechanisms by which work is performed and value created. The design of Business process, which shapes the design of jobs and the kinds of people needed to perform them. These gives rise to an appropriate set of organizational structures and management systems for measuring, hiring, training and developing these people. These systems in turn induce a set of attitudes, beliefs and cultural norms and this support the performance of the processes. Reengineering begins with process design but inevitably moves through all the facets (Hammer and Stanton 1995). They further identified a variety of figures that play an important role in reengineering. These include:

**-The leader**, who is an individual with authority and commitment to launch an undertaking of this magnitude. This should be someone in a position to compel the compliance of all parties involved in reengineering while creating an environment in which reengineering can be done. This leads to increased flexibility and better information and control of both internal work processes and customer behavior.

-**The process owner**, designated by the leader to have the responsibility for the process and its performance mainly working with a team comprising outsiders and insiders.

-**Insiders**, people who work in the current process and bring knowledge, experience and credibility to the team.

-**Outsiders**, people who know nothing about the existing process but can offer the creativity that flows from a fresh, objective perspective.

## 2.2 Key Aspects Of Business Process Reengineering

Despite there being many definitions there is a common understanding amongst Gurus in this field on the key elements of BPR. The following key characteristics are typical to BPR projects:

### Radical change

Reengineering literature advocates radical changes as opposed to small incremental steps. BPR projects attempt to question and usually abandon old ways of operating and replace them with less hierarchical organizational structures and team-based work arrangements. This leads to many simultaneous changes, not only in organizational structures, but also in individual tasks, required skills and responsibilities [Hall et.al (1993)].

### Dramatic performance improvements

Organizations seeking to reengineer their operations should be bold enough not to be satisfied with modest improvement targets [Hammer, (1990)]. Instead of aiming at a small improvement in one performance measure they should set their sights on dramatic improvements in cycle times, production costs, quality of products or services and operational efficiency simultaneously.

### High potential business benefits

In addition to quantitatively measurable and explicit performance improvements, BPR often leads to additional benefits creating opportunities for future success. These may include improved customer satisfaction, increased flexibility and better information and control of both internal work processes and customer behavior.

### **Process-based organizations**

Reengineering literature also argues that organizations employing functional specialization and structures have too narrow perspective and are not flexible enough to succeed in the current turbulent business environment. Solution to these problems is to arrange work cross-functionally along the natural flow of work resulting to organizations based on core business processes, shared information and objectives.

### **Customer orientation**

The objectives of reengineering should be based on the needs of the customer, which can be internal or external to the organization. Every step of the business process should be designed to concretely add value to the customer [Hammer, (1990)].

### **Information technology as an enabler**

Information technology is considered to be the most important enabler of reengineering. This role is based on its capability to make alternative operational solutions economically feasible [Davenport and Short, 1990]. Even though recently also other enablers of change have surfaced, the role of IT has been essential in most reported BPR cases [Davenport, (1993)].

### **Rapid pace of change**

The radical and dramatic nature of reengineering has also called for rapid changes. For example, Hammer and Champy (1993) claim that the changes should be implemented within a year, Recently, Stoddard and Jarvenpaa (1995) have however, questioned whether this rapid pace of implementation can be achieved in practice.

### **High risk**

The high failure rate of reengineering projects indicates that considerable risks are involved. Grover et al (1995) have identified several classes of reengineering related risks that need to be managed in order to succeed in BPR projects.

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## **2.3 Business Process Reengineering Methodology**

Davenport and Short (1990) prescribed a five-step approach to BPR as follows:

### **1. Develop the business vision and process objectives**

BPR is driven by a business vision, which implies specific business objectives such as cost reduction, time reduction, and output quality improvement, learning/empowerment (Nonaka, 1991). In developing a business vision one needs to, assess existing business process directions, consult customers for performance objectives, benchmark for performance objectives and develop specific process attributes. Employees must put aside their old ways of doing things and set a course to make the dramatic changes and improvements necessary for the future. Everything is challenged. Work flows, job definitions, management procedures control processes, organizational structures and even corporate values and culture.

### **2. Identify the processes to be redesigned**

Most firms use the high-impact approach, which focuses on the most important processes or those that conflict most with the business vision. Lesser number of firms uses the exhaustive approach that attempts to identify all the processes within an organization and then prioritize them in order of redesign urgency.

### **3. Understand and measure the existing processes**

For avoiding the repeating of old mistakes and for providing a baseline for future improvement, there is need to describe the current process flow, measure process in terms of new process attributes, identify shortcomings, identify short-term improvements and assess current information technology and organization.

### **4. Identify IT lever**

Awareness of IT capabilities can and should influence process design; hence one needs to identify potential technological and human opportunities for process change, its application to specific processes and determine which constraints will be accepted in the organization.

## 5.Design and build a prototype of the new process

The metaphor of prototype aligns the BPR approach with quick delivery of results, and the involvement and satisfaction of customers. The process steps would therefore be to, brainstorm on alternatives, assess feasibility, risk and benefit, prototype the new process design and implement new organization structure and systems.

### 2.4 Forces Behind BPR

The driving forces behind Reengineering are the 3C's i.e. customers, competition and change.

- **Customer**, customers demand and expect more alternatives customized services and personal attention. They are simply demanding better quality and better prices.
- **Competition**, Due to globalization, global economy offers more customers than ever before. Competition is cutthroat both locally and internationally
- **Change**, There are geopolitical realities like COMESA, technology, customer preferences e.g. use of Automatic Teller Machines, getting news and shopping in the internet. Only those firms that are ready to confront and master change will thrive if they emphasize speed, innovation, flexibility, quality, service and cost.

BPR has also been driven by global forces (Hammer and Champy 1990):

- Information and Communication Technology (ICT) revolution. The growth of the Internet has given birth to concepts of electronic commerce and governments. Given the pervasive impact of technology on organization it is imperative that organizations do a BPR.
- Liberalization. The collapse of communism as away of organization of government has given way to the dominance of capitalist/market-driven economies. Government protection and subsidies are being eliminated and so competition has become more intense.

- Globalization. Emergence of transnational and multinational companies has made companies now compete at a global scale. World-class benchmarks are survival tools.

What this suggests is that the problems encountered by modern organizations are not caused by lazy workers or poor managers, but more often by poor systems design, structure and processes.

#### 2.4.1 Process Improvement (TQM) Versus Process Innovation (BPR)

Davenport (1993) notes that TQM or continuous improvement refers to programs and initiatives that emphasize incremental improvement in work processes and outputs over an open-ended period of time. In contrast BPR or process innovation, refers to discrete initiatives that are intended to achieve radically redesigned and improved work processes.

ACTIVITY	IMPROVEMENT (TQM)	INNOVATION (BPR)
Level of change	Incremental	Radical
Starting point	Existing process	Clean slate
Frequency of change	One-time/continuous	One-time
Time required	Short	Long
Participation	Bottom-up	Top-down
Typical scope	Narrow, within function	Broad cross-functional
Risk	Moderate	High
Primary enablers	Statistical control	Information technology
Type of change	Cultural	Cultural/structural

Source: Davenport (1993)

## 2.4.2 Comparison Of BPR With Other Change Initiatives

	BPR	Rightsizing	Restructuring	TQM	Automation
Assumptions Questioned	Fundamental	Staffing	Reporting Relationships	Customer wants and needs	Technology applications
Scope of change	Radical	Staffing, job responsibilities	Organization	Bottom-up	Systems
Orientation	Processes	Functional	Processes	Processes	Procedures
Improvement goals	Dramatic	Incremental	Incremental	Incremental	Incremental

Source: Vic Gilgeous: Operations and Management of Change, Prentice Hall, 1997.

## 2.5 BPR As A Source Of Sustainable Competitive Advantage

A business process is a set of logically related tasks that use the resources of an organization to achieve a defined business outcome [Davenport and Short, (1990)]. BPR is the radical redesign of business processes to achieve dramatic improvements in critical measures of performance [Hammer and Champy, (1993)]. Thus BPR espouses radical changes in existing obsolete organizational tasks rather than using contemporary technology to speed up existing tasks to improve performance. The common theme running through the BPR literature is the concept of radical change in processes by using contemporary technology and business practices. Thus BPR involves the use of state of art technology, documentable strategies, practices, procedures, and training of personnel to handle change.

Competitive business environment leading to diminishing profits in the eighties forced companies to rethink their strategies for developing competitive advantage. With the emergence of BPR [Davenport and Short, (1990); Hammer, (1990)] it seemed that a solution for surviving and developing competitive advantage in these turbulent times had arrived. Early successful BPR applications opened the floodgates for an abundance of literature on concepts, methods, technology and strategies for BPR.



While BPR is essential to bring to date obsolete organizational procedures and practices, it may however be unable to generate sustainable competitive advantage. The support for the argument is drawn from the literature on the resource-based view of the firm [Sanders (1989)]. An alternate option of using information systems (IS) developed from a resource-based perspective for strategic management of information is presented for developing sustainable competitive advantage.

One reason why BPR seems new is that process innovation has often been the poor relation of product innovation. Lorentz (1995) notes that product innovation often takes precedence over process innovation in many organizations. Indeed, many researchers have argued that this is appropriate. It has been argued that process innovation does not become important until products reach the mature stage of their life cycle. This innovation wisdom is now being questioned.

With reference to their study of the Pharmaceutical industry Pisano and Wheelwright (1995) identify a number of characteristics that heighten the importance of process innovation. This includes, shorter product life cycles, increasingly hard to manufacture products, fragmented, demanding markets and growing technological parity. Although Pisano and Wheelwright's arguments are developed with reference to a specific industry their observations would seem to be much more generally applicable. For example, many manufacturing organization are facing rapidly reducing product life cycles and markets that are becoming increasingly fragmented and demanding.

By focusing on process innovation, first we must focus our reengineering efforts on the characteristics of business processes that allow us to improve the customer value-add of the product or services we create. Redesigning processes so that quality of the working life of employees may lead to increased value added directly through improved quality or indirectly by making employees happier and more responsive to customers [Davenport (1993)]. Second, it forces us to focus on organizational change and change management. Process innovation is both influenced by the organization and its members. There is a

need to recognize how important it is to create organizational conditions that stimulate innovation both with respect to process and product [Davenport, (1993)].

Hall et al (1993) has directed our attention to identifying the core competencies of an organization and being able to focus on the future potential for such competencies. Pisano and Wheelwright, among others, note that process competencies are often a lasting source of competitive advantage. The quantum leaps of performance change to nature of the competitive market place and can often arise as a result of innovations in the underlying business processes. BPR is therefore about rethinking work from the ground in order to eliminate work that is not necessary and to find better ways of doing work. This dramatic improvement in performance will be determined in various ways: reduced costs, increased speed or improved cycle times and great accuracy. It is about quantum leaps in performances, achieving breakthrough in what matters to the organization. Due to market changes, the business may want to change its focus. At the business reengineering end of the spectrum, the change should be strategic because it changes the way the business works, changes the basis of competition or because the scale of benefit such as cost or lead time is large enough to provide a strategic break over competition.

## **2.6 Employee And Change Initiatives**

The scope and scale of change initiatives lie on a continuous spectrum with business reengineering at the end. Process change represents an intentional attempt to improve operational effectiveness, thus affecting the behavior patterns of employees. Employee perception of the change initiatives will greatly influence the extent to which they will accept the changes brought. Process simplification yields improvement involving more than one department or function but where work is essentially concerned with making what we have got work better. This has the same approach as process improvement only that the scope is wide. Benefits are greater than those of process improvement are but not necessarily large.

Process reengineering entails improvements to business. It may include departmental roles and does require changes to organization structure, job design and

material/information flow. Information systems need adaptation or replacement. The benefits of this are step changes in cost, quality or lead times. In this case more emphasis is given to adding value rather than just eliminating no value added activities. Hence benefits may be more strategic, improving customer satisfaction or even changing what the business is able to offer to the market. The distinguishing feature is that the process has been reconceptualised to work in a different way. Automations replace labor with machines or information technology, which embody the existing process. It is possible to combine automation with process changes but the investment in automation is one of the bigger barriers to reengineering.

## 2.7 Effects Of Business Process Reengineering

The application of BPR is intended to have a positive impact in the organization and to cause it to have quantum leaps in productivity and turnover. Changes expected in an entity that applies BPR appropriately includes the following:

- Several jobs or tasks becoming combined with related jobs /tasks
- Workers become more involved in decision making (i.e. empowerment)
- The various steps in a process are performed in accordance with the needs of the next process rather than in some predetermined line or form
- Process has several versions to deal with differing customer requirements (flexibility)
- Work is performed where it makes most sense (i.e. normal boundaries do not apply)
- A reduction in the number of checks and controls insisted on during the process
- The minimization of reconciliation (e.g. of orders) between customers and supplier.

However untold and lasting damage to the organization can occur when reengineering process is used indiscriminately and in a rushed up manner as a blunt cost cutting tool.

## 2.8 Challenges Of Business Process Reengineering

The following problems are typical in implementing reengineering:

## 1. Poor definition of problems and processes

Little time, money and resources given for research leads to poor definition of problems or processes that need reengineering. If objective of the implementation are vague and ambiguous the benefits will be difficult to measure. Sometimes the reengineering project team is not well staffed.

## 2. Design

Any change being designed needs organizational impact analysis. Areas likely to bring problems include:

- Drastic changes in clerical procedures or staffing planned without checking impact on the organization can be disastrous.
- Functional specifications inadequately documented.
- Performance evaluation not conducted .No performance standard established, as the results of the system are not weighed against the original objectives.

Given challenges of innovation and implementation its not surprising to find a very high failure rate among business reengineering projects. A series of studies back-up Michael Hammer's observation on a study carried out in 1994, that 70 per cent of all the reengineering projects fail to deliver what the organization wants. He found that only 16 per cent of the 350 business executives surveyed were fully satisfied with the business efforts. Moreover 68 per cent of the executives reported that their reengineering efforts had unintended side effects, creating new problems instead of solving old ones.

In some cases this problems stemmed from management's inability to identify the actual problems to be solved by reengineering or to distinguish between radical and revamping of core business processes and incremental changes. In such cases companies' wound up making incremental improvements in ongoing operations instead of radically redesigning the business process. In many cases, major hurdles to reengineering were caused by poor implementation and change in management practices that failed to address wide spread change. Delloite and Touche 1995 findings about the greatest obstacle to BPR were 60 per cent due to resistance to change, 40 per cent of limitation of existing systems. Also lack of executive consensus-lack of senior executive champion was sighted.

## 2.9 Re-engineering Service Delivery to Teachers

“Supposing there was a parallel organization competing with the Teachers Service Commission in offering services to the country’s teaching force? Would teachers settle for the TSC or they would prefer the other organization?” This is a question you would hear from senior officials at the TSC headquarters before it made a paradigm shift in its performance. Given the size of the commission, its slow services with a lot of bottlenecks in processes and procedures, have attracted public wrath in the past. Claims of corruption, delayed disciplinary cases up to six years, processing of pensions and returned salaries have been slow, irregular promotions and agents of the commission accused of abusing their offices (Teachers Image, July 2002).

TSC as from the year 2000, made a paradigm shift in its performance by reengineering its services to step up operational efficiency. The core business area of TSC is teacher services. The objective of reengineering was to enhance quality, efficient, cost-effective and expeditious service to the “MWALIMU”. Specific objectives included the following:

- (1) Improving service delivery to the teachers by providing TSC services closer to the school.
- (2) Improving the performance of teachers through school and district-based teacher management and development.
- (3) Involving the stakeholders appropriately at various local levels.
- (4) Strengthening the District Education Boards, Boards of Governors and the Primary School Boards.
- (5) Training of the TSC secretariat staff on customer focused services.

In this respect, the TSC headquarters also shed off most of the operational functions and devolved most of the routine processes to the Agencies. The role of the TSC Headquarters remained that of mainly to formulate policies and regulate operations of the agents through the provision of advice and guidance. Several monitoring and evaluation mechanisms were put in place to ensure that professional standards in the service provision are maintained.

TSC reengineered a number of critical processes. This included the following:

- (1) Teacher registration was initiated at agency level and TSC’s duty is to produce application for registration forms and issue them to its Agents on requisition.

- (2) Recruitment of teachers is demand driven. This function is also performed at various agency levels, TSC's role is to advertise the vacancies, receive appointment returns, then process and issue letters of employment to the successful applicants.
- (3) The role of assignment and transfer of teachers remains the mandate of TSC and agents are to make recommendations.
- (4) The roles of identifying, processing, recommending and approving promotions for teachers is performed at agency levels, TSC initiates the legal framework.
- (5) Matters relating to salaries, pensions and other Human Resource Management issues were also devolved to agency levels.
- (6) Agency level discipline and arbitration committees are formed to facilitate disciplinary and arbitration process while TSC is to hear and review such cases.
- (7) At school level, a training and teacher development sub-committee is constituted to design training programmes for the teachers and evaluate the impact of training on performance improvement ([www.tsc.go.ke](http://www.tsc.go.ke)).

There has been a significant amount of re-structuring and re-organization, goals and objectives have been re-defined with clear service delivery mechanisms put in place. The TSC established a total of 73 TSC units at district levels to ensure services are close to the teachers. To become more responsive to teacher needs, TSC headquarter secretariat staff had to be retrained on customer service delivery to increase their operational efficiency. Creating new divisions such as Human resource development, Educational Management Information Systems (EMIS) and the pensions division to step up internal and operational efficiency. The creation of the Public Relations division was to help in dealing with the crucial communication aspect in the commission. New units created to cater for the needs of teachers include Research, Aids and Surveillance and counseling (Operational Manual For Teachers, 2000). Establishment of a service charter was a manifestation of the commissions' vision to better service and to enable TSC operate under specified standards. In pursuit of its effectiveness, the commission computerized most of its operations and even designed a website to cut on the time taken to communicate with teachers.

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## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.0 Introduction

This chapter sets out various stages that were followed in carrying out the study. These stages include research design, population, sampling, data collection instruments, data collection procedures and finally data analysis.

### 3.1 Research Design

The research problem was studied using a survey. It involved collection of data from secondary school teachers to determine their levels of satisfaction with changes resulting from reengineering of services by Teachers Service Commission.

### 3.2 Population of the study

The population of interest in this study included all secondary school teachers in Nairobi province. Nairobi province was selected because of convenience, time and cost constraints.

### 3.3 Sample Design

Sampling of the total population of secondary school teachers in Nairobi province was done. The sampling frame was the computer database at the Teachers Service Commission containing particulars of all the teachers within Nairobi province. A sample size of 150 teachers was selected.

#### 3.3.1 Sampling procedure

Simple random sampling technique was used in selecting the study sample. This sample was determined using the list of secondary schools and their teacher population (Appendix 3).

A simple random sampling procedure was used to pick the 150 respondents. This sample size was considered large enough to provide a general view of the entire population and hence provide a basis for valid and reliable conclusions. To get a sample size of 150 secondary school teachers, the sample size of 150 was equally shared among the 44

secondary schools to give us a sample size of four (4) teachers per secondary school. Therefore the first four teachers the researcher met in each secondary school staff room were requested to fill the questionnaire. But only 150 responses were to be analyzed.

### **3.4 Data Collection**

The researcher used primary data. A questionnaire (see appendix 2) with closed and open-ended questions was used to collect the data. The questionnaire was comprised of 2 sections:

Section A- General Information about the respondents.

Section B- Questions directed at capturing data for the objectives of the study using a 5 point Likert-scale.

### **3.5 Data Analysis**

Before processing the data gathered, the completed questionnaires were edited to ensure consistency across respondents and to locate omissions. Descriptive statistics were used to present the findings. Frequency tables for arraying data and percentages were used for relative comparisons. The mean and proportions were also used to analyse, interpret and present the findings. Mean scores were calculated from the responses that were rated on a 5-point Likert scale. Comparison of means was done using t-test to determine the extent to which overall levels of satisfaction were related to teachers' personal characteristics. Correlation analysis was also used to determine the relationship between overall levels of satisfaction and each of the resulting changes. Regression analysis was done to establish changes that were major predictors of teachers' overall levels of satisfaction.



## CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

### 4.1 Introduction

Data analysis was carried out to determine teachers' levels of satisfaction with resulting changes from reengineering of services by Teachers Service Commission. Descriptive statistics were used to present the findings. Frequency tables for arraying data and percentages were used for relative comparisons. The mean and proportions were also used to analyse, interpret and present the findings. Comparison of means was done using t-test to determine the extent to which overall levels of satisfaction were related to teachers' personal characteristics. Correlation analysis was also used to determine the relationship between overall levels of satisfaction and each of the resulting changes. Regression analysis was also applied to determine the major predictors of teachers' overall levels of satisfaction.

### 4.2 Response Rate

Out of the 150 questionnaires administered to secondary school teachers in Nairobi province, only 137 were completed and returned. 13 questionnaires were not returned. This gives a response rate of 91.3% and a non-response rate of 8.7%.

### 4.3 Demographics

The demographics considered in the study include gender, age, education level and years of teaching. The findings are presented in Tables 1 to 4.

AGE (YEARS)	FREQUENCY	PERCENTAGE (%)
BELOW 25	0	0
25-35	5	3.6
35-39	46	33.4
40 and above	52	38
Total	137	100

### 4.3.1 Respondents' Gender

Results presented in Table 1 show that 53 (39%) of the respondents were male while the rest 84 (61%) were female.

**Table 1: Respondents' Gender**

GENDER	FREQUENCY	PERCENTAGE (%)
Male	53	39
Female	84	61
Total	137	100

This is consistent with Njuguna (1998) who found that there were more female teachers in Nairobi compared to male teachers. Njuguna attributed this to the fact that TSC gave them preference in posting if their husbands worked in Nairobi.

### 4.3.2 Respondents' Age

Most of the respondents, 98 (71.4%), were above 35 years of age. Those below 35 years were only 28.6%. These results are presented in Table 2.

**Table 2: Respondents' Age**

AGE (YEARS)	FREQUENCY	PERCENTAGE (%)
BELOW 25	0	0
25-29	5	3.6
30-34	34	25
35-39	46	33.4
40 and above	52	38
Total	137	100

### 4.3.3 Respondents' Years of Teaching

Majority of the respondents 90 (65.6%) have taught for over 10 years, while 47 (34.4%) have been teaching for less 10 years. Since June 1998, the government declared a moratorium on the employment of teachers. This explains why we have a small percentage (4.4%) of teachers who have taught for less than four (4) years as shown in Table 3.

**Table 3 Respondents' Years of Teaching**

YEARS OF TEACHING	FREQUENCY	PERCENTAGE (%)
Less than 4	6	4.4
5-9	41	30
Over 10	90	65.6
TOTAL	137	100

### 4.3.4 Respondents Professional Qualifications

Table 4 below shows that majority of secondary school teachers in Nairobi province are Bachelor of Education degree holders (52%) followed by those with diploma in Education (31%). The rest (17%) had postgraduate qualifications.

**Table 4: Respondents' Professional Qualifications**

PROFESSIONAL QUALIFICATIONS	FREQUENCY	PERCENTAGE (%)
Diploma in Education	42	31
Bachelor of Education, B.SC (ED)	71	52
Postgraduate Qualifications (M.ED) M.A (ED)	24	17
Total	137	100

#### 4.4 Teachers' Levels Of Satisfaction With Changes Made By TSC

The first objective of the research study was to establish teachers' levels of satisfaction with changes at TSC. The respondents were asked to rate their level of satisfaction with each change using a scale ranging from highly dissatisfied (1) to highly satisfied (5). The frequency, percentage and mean distribution of teachers' level of satisfaction are shown in Table 5 below.

**Table 5: Frequency, Percentage and Mean distribution of Teachers' levels of satisfaction**

STATEMENT	Highly Dissatisfied		Moderately Dissatisfied		Slightly Satisfied		Moderately Satisfied		Highly Satisfied		Mean	Std dev
	F	%	F	%	F	%	F	%	F	%		
1. Procedure of serving teachers at TSC headquarters reception desk	21	15.3	29	21.2	42	30.7	33	24.1	12	8.8	2.9	1.189
2. Courtesy of employees at TSC headquarters reception desk	25	18.2	41	29.9	47	34.3	21	15.3	3	2.2	2.53	1.029
3. Willingness to serve teachers by employees at TSC headquarter reception desk.	26	19	29	21.2	54	39.4	21	15.3	7	5.1	2.66	1.106
4. Knowledge of range services offered by TSC employees	25	18.2	35	25.5	40	29.2	30	21.9	7	5.1	2.7	1.153
5. Scheduled hours of service to teachers at TSC offices	35	25.5	33	24.1	42	30.7	21	15.3	6	4.4	2.49	1.157
6. Customer care facilities provided e.g. seats, restrooms etc at TSC headquarter	47	34.3	35	25.5	24	17.5	24	17.5	7	5.1	2.34	1.256
7. Current procedures used to serve teachers	27	19.7	33	24.1	43	31.4	26	19	8	5.8	2.67	1.163
8. Mode of communicating with teachers e.g. letters, e-mail, circulars.	27	19.7	30	21.9	46	33.6	27	19.7	7	5.1	2.69	1.148
9. Use of Email by teachers to communicate to TSC	44	32.1	35	25.5	31	22.6	23	16.8	4	2.9	2.33	1.176
10. Time set to respond to specific teacher problems	59	43.1	29	21.2	26	19	16	11.7	7	5.1	2.15	1.239
11. Actual days taken to respond to teachers	51	37.2	43	31.4	20	14.6	21	15.3	2	1.5	2.12	1.121
12. Current procedure for registering new teachers	55	40.1	40	29.2	24	17.5	11	8	7	5.1	2.09	1.166
13. Recruitment of teachers by BOGs	75	54.7	32	23.4	19	13.9	9	6.6	2	1.5	1.77	1.016
14. Advertising teacher vacancies in the print media	36	24	28	18.7	32	21.3	22	15.3	18	12	2.7	1.368
15. Conditions set to determine a teacher deserves a transfer.	44	29.3	44	29.3	21	14	16	10.7	12	8	2.33	1.278

16. Time taken to update teacher records	50	33.3	26	17.3	44	29.3	11	7.3	6	4	2.25	1.162
17. Time taken to process teacher retirement benefits	52	34.7	45	30	25	16.7	14	9.3	1	.7	2.03	1.021
18. Time taken to update teacher's skills inventory	52	34.7	37	24.7	28	18.7	13	8.7	7	4.7	2.17	1.185
19. Conditions for granting study leave	35	23.3	40	26.7	35	23.3	18	12	9	6	2.46	1.194
20. Establishment of Public Relations office	30	20	25	16.7	49	32.7	24	16	9	6	2.69	1.186
21. Performance of the Public Relations officers	30	20	52	34.7	29	19.3	22	14.7	4	2.7	2.4	1.087
22. Procedures for handling complaints from teachers	37	24.7	41	27.3	35	23.3	19	12.7	5	3.3	2.37	1.131
23. Procedures for handling disciplinary cases	56	37.3	36	24	34	22.7	7	4.7	4	2.7	2.03	1.063
24. HIV/AIDS sensitization to teachers	31	20.7	28	18.7	29	19.3	32	21.3	17	11.3	2.82	1.349
25. Computerization of work systems at TSC	30	20	22	14.7	45	30	27	18	13	8.7	2.79	1.256
26. TSC involvement in community based activities	73	48.7	32	21.3	14	9.3	10	6.7	8	5.3	1.89	1.204
27. Promotion of teachers based on merit	48	32	35	23.3	25	16.7	24	16	5	3.3	2.29	1.219
28. Promotion of teachers based on academic qualifications	58	38.7	28	18.7	28	18.7	19	12.7	4	2.7	2.15	1.197
29. TSC consistency in applying stated requirements for promoting teachers	43	28.7	45	30	35	23.3	8	5.3	6	4	2.19	1.081
30. Evaluation of teachers performance by head teachers	56	36.7	46	30.7	26	17.3	7	4.7	3	2	1.98	.990
31. Evaluation of teacher performance by their colleagues	59	39.3	31	20.7	32	21.3	13	9	3	2	2.04	1.103
32. Evaluation of performance for promotion purposes	37	24.7	50	33.3	35	23.3	14	9.3	1	.7	2.21	.981
33. Prescribed teacher workload by TSC	56	37	44	41	24	17	10	7	3	2	2.03	.954
34. Role of BOGs in teacher and school management	41	30	44	32	35	25	11	8	6	4	2.27	1.108
35. Overall assessment of changes by the TSC	24	16	42	28	43	28.7	22	14.7	6	4	2.59	1.088

Teachers were considered satisfied with changes that had a mean score above 2.50 and dissatisfied with changes with a mean score below 2.50. Overall, teachers were satisfied with the following changes made by TSC:

- Procedures of serving teachers at TSC headquarter reception desk (mean = 2.90.)
- Computerization of work systems at TSC (mean = 2.79)

- c) HIV/AIDS sensitization to teachers (mean = 2.82)
- d) Advertising teacher vacancies in the print media (mean = 2.7)
- e) Establishment of a Public Relations office (mean = 2.69)
- f) Mode of communicating with teachers (mean = 2.69)
- g) Current procedures used to serve teachers at TSC headquarters (mean = 2.67)
- h) Knowledge of services to offer by TSC employees (mean = 2.7)
- i) Willingness of TSC secretariat employees to serve teachers (mean = 2.66)
- j) Scheduled hours of service to teachers at TSC headquarter (mean = 2.5)
- k) Courtesy of employees at TSC reception desk (mean = 2.53)
- k) Scheduled hours of service to teachers (Mean = 2.49)

However teachers were dissatisfied with the following changes:

- a) Customer care facilities provided e.g. seats, restrooms etc at TSC headquarters (mean = 2.34)
- b) Conditions set to determine a teacher deserves a transfer (mean = 2.33)
- c) Use of Email by teachers to communicate to TSC (mean = 2.33)
- d) Time set to respond to specific teacher problems (mean = 2.15)
- e) Role of BOGs in teacher and school management (mean = 2.27)
- f) Prescribed teacher workload by TSC (mean = 2.03)
- g) Time taken to process teacher retirement benefits (mean = 2.03)
- h) Current procedures of registering new teachers (mean = 2.09)
- i) Recruitment of teachers by Board of Governors and (mean = 1.77)
- j) TSC involvement in community based activities (mean = 1.89)
- k) Evaluation of teachers by head teachers (mean = 1.98.)

#### 4.5 Overall levels of satisfaction

Each respondent was asked to assess his/her perceived overall level of satisfaction with changes resulting from reengineering of services by TSC. This item was used to show a respondents affective reactions to the changes brought about by TSC. The rating scale ranged from highly dissatisfied (1) to highly satisfied (5). The frequency and percentages

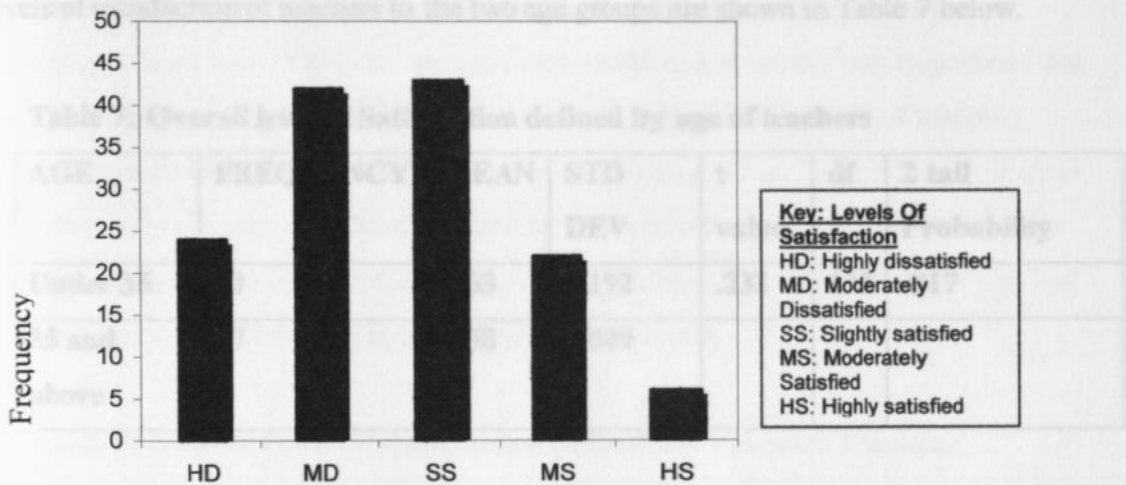
are reported in Table 6. Slightly above four percent (4.4%) of the respondents were highly satisfied as compared to sixteen percent (16%) who were moderately satisfied with overall changes. Slightly above thirty one percent (31.4%) were slightly satisfied, close to thirty one percent (30.6%) moderately dissatisfied and seventeen and half percent (17.5%) highly dissatisfied. In short, 52% of the respondents indicated they were satisfied and 48% dissatisfied with the changes.

**Table 6: Distribution of Teachers' Overall Levels of Satisfaction**

Level of satisfaction	Scale	Frequency	Percentage	Cumulative Percent
Highly Satisfied	5	6	4.4	4.4
Moderately Satisfied	4	22	16.1	20.5
Slightly Satisfied	3	43	31.4	51.9
Moderately Dissatisfied	2	42	30.6	82.5
Highly Dissatisfied	1	24	17.5	100
Total		137	100	
<b>Mean = 2.59</b>				
<b>Std dev = 1.088</b>				

The histogram showing teachers' overall levels of satisfaction is shown in Figure 1 below.

**Figure 1: Teachers' levels of satisfaction with changes at the TSC**



#### 4.6 Teachers' Overall Levels Of Satisfaction And Their Personal Characteristics

Research objective two was to establish significant differences in teachers' levels of satisfaction in terms of their personal characteristics. Overall level of satisfaction indicates person's affective reactions to his/her total work role (Lawler, 1973). The t-test procedure was used to determine the extent of differences in which teachers' overall levels of satisfaction were related to their selected personal characteristics.

Are there significant differences in teachers' overall levels of satisfaction as reported by:

- (a) Female and male teachers?
- (b) Teachers below 35 years (younger) and those above 35 years (older)?
- (c) Novice (0 to 4 years experience) and experienced (5 or more years) teachers?
- (d) Teachers who had Bachelors' degree and lower qualifications and those with postgraduate qualifications?



#### 4.6.1: Overall level of Satisfaction and Teachers' Age

In order to use the t-test procedure to analyze the results, the respondents were divided into two independent age groups of below 35 years and above 35 years. The null hypothesis to be tested was that teachers below 35 years and those above 35 years differed significantly in their overall levels of satisfaction. The means of the overall levels of satisfaction of teachers in the two age groups are shown in Table 7 below.

**Table 7: Overall level of Satisfaction defined by age of teachers**

AGE	FREQUENCY	MEAN	STD DEV	t value	df	2 tail Probability
Under 35	40	2.63	1.192	.232	135	.817
35 and above	97	2.58	1.049			

The mean calculated from the reported overall level of satisfaction of teachers who were 35 years and above was not statistically significantly different from that of those teachers who were below 35 years at 0.05 level of significance. This meant that age was not a significant determinant of teachers' overall level of satisfaction for this population sample. We therefore reject the null hypothesis and accept the alternative.

#### 4.6.2 Overall Level of Satisfaction and Gender

An independent samples t-test was conducted to evaluate the null hypothesis that male and female teachers differ significantly in their overall levels of satisfaction.

**Table 8: Overall Level of Satisfaction defined by Teachers' Gender**

Gender	FREQUENCY	MEAN	STD DEV	t value	df	2 tail Probability
Male	53	2.60	1.044	.107	135	.915
Female	84	2.58	1.122			

The mean score calculated from the reported overall level of satisfaction for female teachers is not statistically significantly different from that of male teachers at 0.05 level

of significance as reported in table 8 above. For this sample of respondents, gender was not a significant determinant of the teachers' overall level of satisfaction. We therefore reject the null hypothesis and accept the alternative.

#### 4.6.3 Overall Levels Of Satisfaction defined by Years of Teaching

Respondents were also grouped in terms of the number of years one had taught at secondary school level. The t-test analysis was conducted to test the null hypothesis that teachers with more than four (4) years and those with less than four (4) of teaching differed significantly in their overall levels of satisfaction. From Table 9 below, there is no statistically significant difference in the mean score on overall level of satisfaction between teachers who had less than four years of teaching from those teachers who had five or more years of teaching at 0.05 level of significance.

**Table 9: Overall Level Of Satisfaction Defined By Years Of Teaching**

Years of Teaching	FREQUENCY	MEAN	STD DEV	t value	df	2 tail Probability
0 to 4	6	3.17	1.169	1.328	135	.186
5 and above	131	2.56	1.082			

#### 4.6.4 Overall Levels Of Satisfaction defined by Teachers' Qualifications

The null hypothesis tested was that there is a significant difference between teachers holding Bachelors degree and lower qualifications and those possessing postgraduate qualifications in terms of their overall levels of satisfaction.

**Table 10: Overall Level of Satisfaction defined by Teacher Qualifications**

Teacher Qualifications	FREQUENCY	MEAN	STD DEV	t value	df	2 tail Probability
Bachelors and below	113	2.59	1.099	.039	135	.969
Postgraduate	24	2.58	1.060			

Table 11: Pearson Correlation Co-efficient between Teachers' overall levels of

As shown in table 10 above, the t-test indicated that there was no statistically significant difference between teachers who had Bachelors degree and lower qualifications from those teachers who had Postgraduate qualifications at 0.05 level of significance. This means that we reject the null hypothesis and accept the alternative.

In summary, t-test results indicate that there are no statistical significant differences in teachers' overall levels of satisfaction and their personal characteristics. We therefore reject our first research study null hypothesis, **H<sub>0</sub>**: There is a significant difference in the teachers' overall levels of satisfaction and their personal characteristics and accept the alternative.

#### 4.7 Relationship between Teachers' Overall levels of satisfaction and changes at TSC

Research objective 3 was to establish which changes resulting from reengineering of services by TSC are the major predictors of teachers' overall levels of satisfaction. To put this question in multiple regression terminology;

**H<sub>0</sub>**: There is no linear relationship between teachers' overall levels of satisfaction (dependent variable) and each of the 34 changes at TSC (independent variables).

The Pearson correlation co-efficient was used to determine the direction and the strength of relationship between teachers' overall levels of satisfaction and each of the changes as per research hypothesis 2 of the study. Table 11 below shows the Pearson correlation co-efficient between teachers' overall levels of satisfaction and changes at TSC.

Knowledge of range services to offer by TSC employees	.283**
Scheduled hours of service to teachers at TSC offices	.154
Recruitment of teachers by BCOs	.199*
Advertising teacher vacancies in the print media	.228**
Use of ICT to update teacher records	.180*
Use of ICT to assess teacher retirement benefits	.103
Use of ICT to assess teacher performance	.168
Use of ICT to assess teacher performance by their colleagues	.307**
Use of ICT to assess teacher performance for promotion purposes	.267**
Use of ICT to assess teacher workload by TSC	.303**
Use of ICT to assess teacher and school management	.276**

\*Correlation co-efficient significant at 0.01 level (2-tailed), (N=137)

\*\*Correlation co-efficient significant at 0.05 level (2-tailed), (N=137)

The results indicated that teachers' overall levels of satisfaction at 0.01 level of significance

is highly correlated with:

UNIVERSITY OF NAIRUBI  
LOWER KABETE CAMPUS

**Table 11: Pearson Correlation Co-efficient between Teachers' overall levels of satisfaction and changes by TSC**

Statement	r
1. Procedure of serving teachers at TSC headquarters reception desk	.161
2. Courtesy of employees at TSC headquarters reception desk	.353**
3. Willingness to serve teachers by employees at TSC headquarter reception desk.	.142
4. Knowledge of range services to offer by TSC employees	.283**
5. Scheduled hours of service to teachers at TSC offices	.154
6. Customer care facilities provided e.g. seats, restrooms etc at TSC headquarter	.230**
7. Current procedures used to serve teachers	.253**
8. Mode of communicating with teachers e.g. letters e-mail, circulars.	.179*
9. Use of email by teachers to communicate to TSC	.025
10. Days stated to respond to specific teacher problems	.061
11. Actual days taken to respond to teachers	.072
12. Current procedure for registering new teachers	.081
13. Recruitment of teachers by BOGs	.199*
14. Advertising teacher vacancies in the print media	.228**
15. Conditions set to warrant teacher transfers	.150
16. Time taken to update teacher records	.180*
17. Time taken to processes teacher retirement benefits	.103
18. Time taken to update teacher's skills inventory	.116
19. Conditions for granting study leave	.129
20. Establishment of Public Relations office	.168
21. Performance of the Public Relations officers	.307**
22. Procedures for handling complaints from teachers	.130
23. Procedures for handling disciplinary cases	.188*
24. HIV/AIDS sensitization to teachers	.091
25. Computerization of work systems at TSC	.324**
26. TSC involvement in community based activities	.285**
27. Promotion of teachers based on merit	.002
28. Promotion of teachers based on academic qualifications	.266**
29. TSC consistency in applying stated requirements for promoting teachers	.266**
30. Evaluation of teachers performance by head teachers	.267**
31. Evaluation of teacher performance by their colleagues	.303**
32. Evaluation of performance for promotion purposes	.178*
33. Prescribed teacher workload by TSC	.323**
34. Role of BOGs in teacher and school management	.270**

\*\* Correlation co-efficient significant at 0.01 level (2-tailed), (N=137)

\* Correlation co-efficient significant at 0.05 level (2-tailed), (N=137)

The data indicated that teachers' overall levels of satisfaction at 0.01 level of significance moderately correlated with:

UNIVERSITY OF NAHURU  
LOWER KABETE CAMPUS

- 1) Courtesy of employees at TSC headquarter reception desk ( $r = .353$ )
- 2) Computerization of work systems at TSC ( $r = .324$ )
- 3) Prescribed teacher workload by TSC ( $r = .323$ )
- 4) Performance of the Public Relation officers ( $r = .307$ )
- 5) Evaluation of teacher performance by their colleagues ( $r = .303$ )
- 6) TSC involvement in community based activities( $r = .285$ )
- 7) Knowledge of range services to offer by TSC employees( $r = .283$ )
- 8) Role of BOGs in teacher and school management( $r = .270$ )
- 9) Evaluation of teachers' performance by head teachers ( $r = .267$ )
- 10) Promotion of teachers based on academic qualifications ( $r = .266$ )
- 11) TSC consistency in applying stated requirements for promoting teachers( $r = .266$ )
- 12) Current procedures used to serve teachers( $r = .253$ )
- 13) Customer care facilities provided TSC headquarter( $r = .230$ )
- 14) Advertising teacher vacancies in the print media ( $r = .228$ )

Table 11 also indicated that there was low positive correlation between teachers' overall levels of satisfaction and the following 5 changes at 0.05 level of significance:

- 1) Recruitment of teachers by BOGs( $r = .199$ )
- 2) Procedures for handling disciplinary cases( $r = .188$ )
- 3) Time taken to update teacher records( $r = .180$ )
- 4) Mode of communicating with teachers e.g. letters e-mail, circulars( $r = .179$ )
- 5) Evaluation of performance for promotion purposes( $r = .178$ )

The analysis also showed non-significant low positive correlation of teachers' overall levels of satisfaction with among other changes:

- 1) Time taken to process teacher retirement benefits ( $r = .103$ )
- 2) Actual days taken to respond to specific teacher problems ( $r = .061$ )
- 3) Promotion of teachers based on merit ( $r = .002$ )

The Pearson Correlation co-efficient showed that teachers' overall levels of satisfaction had a positive correlation with all the 34 changes. Out of the 34 changes, 14 had significant levels at 0.01 while 5 had significant levels at 0.05. This means that the  $H_0$  hypothesis 2 was rejected at 0.05 level of significance for 5 changes and at the 0.01 level of significance for 14 changes shown in Table 11. In other words, there did exist a significant linear relationship between teachers' overall levels of satisfaction and each of these 19 changes.

#### 4.8 Predictors Of Teachers' Overall Levels Of Satisfaction

Stepwise multiple linear regression was used to identify changes that were major predictors of teachers' overall levels of satisfaction in line with objective 3 of the research study. Out of the thirty four (34) changes that entered the regression equation, only five (5) changes emerged as statistically significant predictors of teachers' overall levels of satisfaction. The five (5) predictors of overall levels of satisfaction shown in Table 13 accounted for 52% of variance in job satisfaction as indicated by the value of adjusted R square. The five (5) changes predicting teachers' overall levels of satisfaction in order of importance indicated by their value of R square were:

- 1) Courtesy of employees at TSC headquarter reception desk (12.5%)
- 2) Computerization of work systems at TSC (10.5%)
- 3) Prescribed teacher workload by TSC (10.4%)
- 4) Performance of Public Relations officers (9.4%)
- 5) Evaluation of teachers' performance by their colleagues (9.1%).

These changes were major predictors to teachers' overall levels of satisfaction with changes resulting from reengineering of services by TSC.

**Table 12: Stepwise Multiple Regression Analysis of Changes as major predictors of Teachers' overall levels of satisfaction**

Major Predictors	% Variance in Teacher level of satisfaction	r	t	p
Courtesy of employees at TSC headquarter reception desk	39.85	.353	4.389	.001
Computerization of work systems at TSC	39.35	.324	3.603	.006
Prescribed teacher workload by TSC	33.7	.323	2.969	.004
Performance of Public Relations officers	36.7	.307	2.813	.011
Evaluation of teachers' performance by their colleagues.	36.6	.303	2.065	.041

The other changes that had low correlation co-efficient with overall changes but did account for more than 5 % of the variance in teachers' overall levels of satisfaction as indicated by the value of R square were:

- Knowledge of range of services to offer by TSC employees (8%)
- Promotion of teachers based on academic qualifications (7.1%)

The Pearson Correlation Matrix (see Appendix C, Table C-1) showed that the best predictor of teachers' overall levels of satisfaction, "courtesy of employees at TSC headquarter reception desk," correlated highly with the following changes:

- Willingness to serve teachers by TSC employees ( $r = .507$ )
- Procedure of serving teachers at TSC reception desk ( $r = .381$ )

- TSC secretariat employees' knowledge of services to offer ( $r = .315$ )
- Scheduled hours of service for teachers at TSC offices ( $r = .236$ )

#### Discussion

The second best predictor, "computerization of work systems at TSC," correlated highly with the following changes:

- TSC involvement in community based activities ( $r = .490$ )
- Mode of communication used for HIV/AIDS sensitization to teachers ( $r = .372$ )
- Performance of Public Relations officers ( $r = .364$ )
- Customer care facilities provided at TSC headquarters ( $r = .297$ )

The correlation co-efficient matrix seems to suggest that the strongest predictor of teachers' overall levels of satisfaction, "customer services" is an umbrella change variable which may easily through intercorrelation include, "Procedures," "willingness", "knowledge of customer services" and "timely services".

Results showed that teachers' levels of satisfaction with changes at TSC were high. Changes geared towards improving customer services were the leading in the satisfaction scales. Introduction and implementation of customer services with other changes such as: procedures of serving teachers at TSC headquarter reception desk, range of services offered by TSC employees, computerization of its work systems and establishment of Public Relations division scored highly in the satisfaction scales. This confirms the literature review that showed that customers are the driving force for reengineering and thus need customized services. With a service charter implemented as a manifestation of the commissions' vision to better customer service, the levels of satisfaction in terms of customized service delivery is expected to increase further.

Results established that customer services with its accompanying processes such as procedures of serving teachers, courtesy of secretariat employees to teachers while serving them, knowledge of services being offered and willingness to serve teachers outside TSC to a large extent achieve its objectives of reengineering. Among the objectives was efficient and effective service delivery.



## CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Discussion

In this section, we discuss the main findings, draw conclusions and make recommendations emanating from the research findings covered in the previous chapter. The first objective was to establish teachers' level of satisfaction with changes resulting from reengineering of services by Teachers Service Commission. In this respect, the study showed that teachers are moderately satisfied with majority of the changes that have been put in place by TSC. As reported in chapter 4, each respondent was to assess overall level of satisfaction with changes resulting from reengineering of services by Teachers Service Commission. This item was used to show a teacher's affective reaction to changes carried out by TSC. The rating scale ranged from 5 (Highly Satisfied) to 1 (Highly Dissatisfied).

The study showed that teachers' levels of satisfaction with changes at TSC were moderate. Changes geared towards improving customer services were the leading in the satisfaction scales. Introduction and implementation of customer services with other changes such as: procedures of serving teachers at TSC headquarter reception desk, knowledge of services offered by TSC employees, computerization of its work systems and establishment of Public Relations division scored highly in the satisfaction scales. This confirms the literature review that showed that customers are the driving force behind reengineering and thus need customized services. With a service charter established as a manifestation of the commissions' vision to better customer service, teachers' levels of satisfaction in terms of customized service delivery is expected to increase further.

It was established that customer services with its accompanying processes such as procedures of serving teachers, courtesy of secretariat employees to teachers while serving them, knowledge of services being offered and willingness to serve teachers basically made TSC to a large extent achieve its objectives of reengineering. Among these objectives was efficient and effective service delivery.

Regarding computerization of its process, teachers' levels of satisfaction were also high. A possible explanation to this is that internal efficiency of TSC's operations has greatly improved. Previously delayed services such as salary payments have been reduced. Operational functions and routine processes now devolved to agency levels enable teachers to get closer services through networking.

The establishment of the Public Relations Division and performance of its officers has contributed to increased teachers' levels of satisfaction. High potential business benefits that accrue to an organization are largely determined by how it handles its communication. (Hall et al 1993). The PR officers handle majority of complaints from whichever stakeholder and therefore teachers feel that TSC is opening up to its publics. PR is enriching the good image (corporate identity) of the commission by providing accurate and specific information and creating awareness of the role of the commission in the development of education sector in Kenya.

However, teachers' were dissatisfied with the following changes: recruitment of teachers by BOGs, evaluation of teachers' performance by head teachers and TSC involvement in community based activities. The high levels of teacher dissatisfaction express lack of Boards of Governors to infuse professionalism in the management of school and teacher issues. Promotion and participation of secretariat staff in the provision of community-based services has also not been received well by teachers. This is because teachers feel they should be empowered and given that mandate. Evaluation of teachers by head teachers has been faced with acquisitions of such reports being biased.

## 5.2 Conclusions of the study

Perhaps the most crucial issue affecting TSC now is how to effectively customize its services to each individual teacher. The total percentage of teachers satisfied (52%) was slightly bigger than those who were dissatisfied (48%). Changes that had greatest level of satisfaction were customer services offered at TSC headquarter reception desks and computerization of its work systems. TSC needs to pay more attention to its customer

care services at its reception desk and automate most of the commission work both at the headquarters and District levels.

There is needed to replicate this study in other provinces in order to validate its claims

Changes that contributed most to dissatisfaction included the recruitment of teachers by Boards of Governors (BOGs). The capacity of these boards to hire and fire teachers has been questioned because most of those boards are not professionally equipped to handle teachers and school matters. The outcomes of this study support the contention that reengineering of services by TSC is a worthwhile endeavor.

### **5.3 Recommendations**

The major input in the re-engineering process was in the review of TSC's existing systems, operations, processes and procedures. First, TSC needs to focus its efforts to understand and remove those changes that are bringing dissatisfaction, over which they have considerable control. For example, TSC should participate in the selection of Boards of Governors and this should be done through job advertisements so that appropriate candidates are selected.

It is evident that time allocated to serve teachers at TSC headquarters is not enough. It should then network the operations of the different TSC divisions with the districts to reduce long queues of teachers seen over the school holidays. From studies on other organizations, TSC should be more change oriented and continuously seek feedback on the levels of satisfaction of teachers on these changes.

### **5.4 Limitations of the study**

1. This research was limited because it was not a longitudinal study. Teachers' levels of satisfaction were not measured over time. The measurements were restricted to one particular time in the school year, that is the month of July 2003 .The response, therefore may not be representative of other times.
2. The size and nature of the sample may limit generalizability of the findings of the study to all teachers in Kenya.

## REFERENCES

### 5.5 Suggestions For Further Research

1. There is needed to replicate this study in other provinces in order to validate its claims as well as ascertain the reliability of the findings.
2. There is also need to carry out further research on other personnel like the primary school teachers, Teachers Service Commission secretariat staff and even employees of the Ministry of Education, science and Technology.

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# APPENDIX 1

## INTRODUCTION LETTER

Section A: Contextual and Personal Data

Judith B. Mairura

Please provide the following information. Be frank and honest in your responses. All your responses will be treated with strict confidence.

University of Nairobi

Faculty of Commerce

Department of Business Administration

P.O BOX 30197

Nairobi.

Name of school .....

Your gender. (Tick) Male ( ) Female ( )

Dear Respondent,

Your age. (Tick) Below 25 ( ) 25-29 ( ) 30-34 ( ) 35-39 ( )

I'm a postgraduate student in the Faculty of Commerce, University of Nairobi, pursuing a Masters in Business Administration (MBA) degree programme.

I'm undertaking a management research project: ***A survey of Teachers' level of satisfaction with changes resulting from Reengineering of services by the Teachers Service Commission (TSC).***

How long have you been teaching? (Count the present year as a full year).  
0-4 ( ) 5-9 ( ) 10 and above ( )

You have been selected as one of the respondents. I therefore request you to fill the questionnaire to the best of your knowledge. The information you give is needed purely for academic research purposes and will therefore be treated with strict confidence. In no way will your name appear in the final report.

a) Certificate level ( )

(ii) Professional qualification  
a) SI ( )

A copy of the final report will be made available to you upon request.

Thank you for your valuable cooperation.

c) Bachelor of Education ( )

d) Masters degree ( )

d) Postgraduate in Education ( )

Yours faithfully, Any other (specify)

e) Any other (specify)

J.B. Mairura

MBA STUDENT



**QUESTIONNAIRE**

**Section A: Contextual and Personal Data**

Please provide the following information. Be frank and honest in your responses  
All your responses will be treated with strict confidence.

1. Name of school .....

2. Your gender. (Tick) Male ( ) Female ( )

3. Your age. (Tick) Below 25 ( ) 25-29 ( ) 30-34 ( ) 35-39 ( )  
40 and above ( )

4. Your major teaching subjects.....

5. How long have you been teaching? (Count the present year as a full year).

0-4 ( ) 5-9 ( ) 10 and above ( )

6. Indicate all the education qualifications that you have attained

(i) Academic qualification

(ii) Professional qualification

a) Certificate level ( )

a) SI ( )

b) College diploma ( )

b) Diploma in education ( )

c) Bachelors degree ( )

c) Bachelor of Education ( )

d) Masters degree ( )

d) Postgraduate in Education ( )

e) Any other (specify)

e) Any other (specify)

.....

.....

.....

.....

## SECTION B: Teacher Satisfaction

Using the scale given below indicate your level of satisfaction with Services provided by the Teachers Service Commission. Put a tick in the relevant box.

**Highly satisfied (HS) .....5**

**Moderately Satisfied (MS).....4**

**Slightly Satisfied (SS). ....3**

**Moderately Dissatisfied (MD)..... 2**

**Highly Dissatisfied (HD)..... 1**

HS	MS	SS	MD	HD
5	4	3	2	1

No	STATEMENT	HS 5	MS 4	SS 3	MD 2	HD 1
1	Procedure of serving teachers at TSC headquarters reception desk					
2	Courtesy of employees at the reception desk at the TSC headquarters.					
3	Willingness to serve teachers by employees at the TSC reception desk					
4	TSC secretariat employees' knowledge of the range of services available to teachers to offer					
5	Scheduled hours of service to teachers at TSC offices (8.30-12.30 a.m and 2.30-4.30 p.m)					
6	Customer care facilities such as seats, restrooms etc provided at TSC headquarters					
7	Current procedures used to serve teachers at TSC headquarter					
8	Mode of communicating with teachers (e.g. letters, circulars, e-mail)					
9	Use of E-mail by teachers to communicate to TSC					
10	Actual days taken to respond to specific teacher problems					

- Highly satisfied (HS).....5  
 Moderately Satisfied (MS).....4  
 Slightly Satisfied (SS) .....3  
 Moderately Dissatisfied (MD).....2  
 Highly Dissatisfied (HD).....1

Put a tick in the relevant box.

No	Statement	HS	MS	SS	MD	HD
		5	4	3	2	1
11	Specified number of days to respond to teacher requests and problems (e.g. six months to resolve discipline cases)					
12	The current procedure for registering new teachers					
13	Recruitment of teachers by Board of Governors (BOGs)					
14	Systems of advertising teacher vacancies (new and promotions) in the print media					
15	Conditions set for transfers requested by teachers themselves					
16	Time taken to update teacher records when there are changes					
17	Time taken to processes teacher retirement (from notification to payment of benefits)					
18	Time it takes to update a teacher's skills inventory (e.g. recording additional qualifications)					
19	Conditions for granting study leave					
20	Establishment of a Public Relations office					
21	Performance of the Public Relation Officers					
22	Procedures for handling complaints from teachers					
23	Procedures for handling disciplinary cases					

Highly satisfied (HS).....5

Moderately Satisfied (MS).....4

Slightly Satisfied (SS). ....3

Moderately Dissatisfied (MD).....2

Highly Dissatisfied (NS).....1

Put a tick in the relevant box.

No	Statement	HS	MS	SS	MD	HD
		5	4	3	2	1
24	Mode of communication used for HIV/AIDS sensitization to teachers (AIDS messages in pay slips)					
25	Computerization of work systems at TSC					
26	TSC involvement in community based activities					
27	Promotion of teachers based on merit					
28	Promotion of teachers based on qualifications (academic and professional)					
29	TSC consistency in applying requirements for promoting teachers					
30	Methods used to evaluate teachers by head teachers					
31	Evaluation of teachers performance by their colleagues					
32	Evaluation of performance only for purposes of promotion					
33	Prescribed teacher workload by TSC					
34	The role of Board of Governors (BOGs) and PTAs in teacher and school management					
35	Your overall assessment of the changes at the TSC					

### Open-Ended Questions

35. What changes have contributed most to your overall level of satisfaction with services given by Teachers Service Commission?

School Name	Duty Teachers
Highway Sec School	58
Mumini Girls Sec	30
Ngara Girls Sec	27
Chakula High	56
Pumwani Sec School	40
Precious Blood Sec	22

36. What changes have contributed most to your overall level of dissatisfaction with services given by Teachers Service Commission?

Our Lady Of Mercy	19
St. Peter's Sec	22
St. Teresa's Boys	27
St. Peter's Girls	21
State House Girls	39
Upperton Sec	31
Lemna High	52
Kenya High	56
Nairobi School	64
Langata Sec School	28
Mumini Sec School	17
Moi Forces Academy	46
Kambiti High School	27
Kangemi Sec School	26
Ruthimitu Sec School	24
Hospital Hill	24

**Thank you and May God bless you for taking time to complete this questionnaire.**

Appendix 3

SECONDARY SCHOOLS AND DUTY TEACHERS IN NAIROBI PROVINCE

School Name	Duty Teachers
Highway Sec School	58
Huruma Girls Sec	30
Ngara Girls Sec	27
Ofafa Jericho High	30
Pumwani Sec School	40
Precious Blood Sec	22
Parklands Arya Girls	33
Muslim Girls Sec	19
Our Lady Of Mercy	22
Parklands Sec School	30
St. Teresa's Boys	27
St. Teresa's Girls	24
State House Girls	39
UpperHill Sec	40
Lenana High	52
Kenya High	56
Nairobi School	64
Langata Sec School	28
Mutuini Sec School	17
Moi Forces Academy	46
Kamiti High School	27
Kangemi Sec School	26
Ruthimitu Sec School	24
Hospital Hill	24

Nembu Sec School	17
Ruaraka High School	22
Nairobi Milimani Sec.	19
St. George's Girls Sch.	45
Buruburu Girls Sch.	32
Dandora Sec Sch.	19
Starehe Boys Sec.	59
Our Lady Of Fatima Sec	37
Nile Road Sec	21
Uhuru Sec Sch.	17
Maina Wanjigi Sec Sch.	20
Kamukunji Sec Sch.	20
Kayole Sec Sch.	18
Sunshine Sec Sch.	47
Muhurimuchiri	19
Ebakasi Girls Sec	11
Ruthimitu Girls Sec	11
Kahawa Garrison Sec	10
St. Charles Khalaba Sec.	16
Moi Nairobi Girls	43

Source:TSC Computer Database(July 2003)

## APPENDIX 4

**Pearson Correlation Co-efficient Matrix For Changes Made By TSC and Teachers' Satisfaction**

	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12
b1	1.000	.381**	.437**	.326**	.309**	0.131	.310**	.197*	0.134	.170*	.191*	.203*
b2	.381**	1.000	.507**	.468**	.393**	.196*	.282**	.211*	-.036	0.140	.242**	0.065
b3	.437**	.507**	1.000	.315**	.236**	.172*	.365**	.344**	0.147	0.149	0.141	0.165
b4	.326**	.315**	.468**	1.000	.320**	.253**	.441**	.339**	0.116	0.144	0.086	-0.068
b5	.309**	.236**	.393**	.320**	1.000	0.149	.338**	.249**	0.065	.175*	0.095	.251**
b6	0.131	.196*	.172*	.253**	0.149	1.000	.298**	.323**	0.109	.176*	.210*	0.000
b7	.310**	.282**	.365**	.441**	.338**	.398**	1.000	.516**	.230**	.354**	0.122	-0.022
b8	.197*	.211*	.344**	.339**	.249**	.323**	.516**	1.000	.327**	.425**	.344**	-.045
b9	0.134	-0.036	0.147	0.116	0.650	0.109	.230**	.327**	1.000	.365**	.175*	.193*
b10	.170*	0.140	0.149	0.144	.175*	.176*	.354**	.425**	.365**	1.000	.389**	.230**
b11	.191*	.242**	0.141	0.860	0.950	.210*	0.122	.344**	.175*	.389**	1.000	.250**
b12	.203*	0.650	0.165	0.680	.251**	0.000	-.022	-.045	.193*	.230**	.250**	1.000
b13	.017*	.232**	0.106	0.350	-.40	-.36	-.016	-.025	0.052	0.132	.219*	.222**
b14	0.620	1.000	0.500	-.6	0.190	0.460	0.076	-.107	0.139	0.043	0.015	.224**
b15	.177*	0.123	0.940	0.200	0.149	0.105	0.118	0.126	.255**	0.099	.207*	.212*
b16	0.980	0.135	.168*	0.320	0.155	.169*	0.131	.230**	0.166	0.153	.315**	.261**
b17	.184*	.216*	.217*	0.132	0.600	0.159	0.076	.252**	.267**	0.142	.196*	0.121
b18	.169*	0.101	0.111	0.129	0.740	0.310	0.173	.169*	.261**	.193*	0.078	-0.032
b19	.173*	0.620	0.101	.207*	0.134	0.830	0.083	0.079	0.080	0.108	-0.010	0.008
b20	.357**	.174*	.250**	.226**	.246**	0.130	.244**	0.040	0.148	0.166	0.162	.254**
b21	.350**	.267**	.339**	.296**	.275**	.256**	.366**	.207*	0.161	.256**	0.158	0.158
b22	.225**	0.150	.224**	0.137	.208*	0.610	.256**	.209*	.228**	.260**	.178*	0.165
b23	0.720	.214*	0.580	0.109	0.900	.319**	.174*	.248**	0.098	.342**	.237**	0.010
b24	0.117	0.840	0.880	0.940	0.300	.234**	0.150	0.097	-.079	-0.015	0.155	-0.084
b25	.197*	.253**	.186*	.189*	0.122	.297**	.168*	0.142	-.012	.176*	.217*	.218*
b26	0.167	.225**	0.160	0.156	0.139	.355**	.205*	0.134	0.098	.213*	.266**	.185*
b27	0.127	0.109	-0.300	-0.580	-.86	0.094	-.041	-.018	.199*	0.113	.194*	0.142
b28	.212*	.235**	.170*	0.048	.313*	0.158	.188*	0.087	0.081	.317**	.227**	.333**
b29	0.147	0.120	0.140	0.005	.231**	.240**	.237**	.267**	.321**	.231**	.405**	.424**
b30	0.120	0.230	0.153	.225**	0.165	.199*	.285**	.193**	.169*	0.165	0.018	.174*
b31	0.127	.199*	.235**	0.161	0.115	0.154	.229**	0.156	0.057	0.081	.281**	.248**
b32	.170*	0.164	.222**	0.095	0.109	0.043	0.106	0.164	.245**	0.113	.170*	.247**
b33	.190*	.283**	.211*	0.068	.233**	0.127	0.075	0.062	0.109	.183*	0.148	.255**
b34	0.155	0.137	0.570	0.012	0.114	0.103	-.045	-0.002	0.089	.201*	0.121	.329**
b35	0.161	.553**	0.420	.283**	0.154	.230**	.253**	.179*	0.025	0.061	0.072	0.081

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

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

N=137



b13	b14	b15	b16	b17	b18	b19	b20	b21	b22	b23	b24
0.017	0.062	.177*	0.098	.184*	.169*	.173*	.357**	.350**	.225**	0.072	0.117
.232**	0.010	0.123	0.135	.216*	0.101	0.062	.174*	.267**	0.150	.214*	0.084
0.106	0.050	0.094	.168*	.217*	0.111	0.101	.250**	.339**	.224**	0.058	0.088
-0.035	-0.006	0.002	0.023	0.132	0.129	.207*	.226**	.296**	0.137	0.109	0.094
-0.040	0.019	0.149	0.155	0.006	0.074	0.134	.246**	.275**	.208*	0.090	0.003
-0.036	0.046	0.105	.169*	0.159	0.031	0.083	0.130	.256**	0.061	.317**	.234**
-0.016	0.076	0.118	0.131	0.076	.173*	0.083	.244**	.366**	.256**	.174*	0.150
-0.025	0.543	0.126	.230**	.252**	.169*	0.079	0.040	.207*	.209*	.248**	0.097
0.052	0.139	.255**	0.166	.267**	.261**	0.080	0.148	0.161	.228**	0.098	-0.079
0.132	0.043	0.099	0.153	0.142	.193*	0.108	0.166	.256**	.260**	.342**	-0.015
.219*	0.015	.207*	.315**	.196*	0.078	-0.010	0.162	0.158	.178*	.237**	0.155
.222**	.224**	.212*	.261**	0.121	-0.032	0.008	.254**	0.158	0.165	0.010	-0.084
1.000	0.050	0.116	.211*	0.162	.198*	0.035	0.012	0.032	-0.026	0.122	0.029
0.050	1.000	.212*	.190*	0.059	0.027	.184*	.304**	0.086	0.087	-0.029	0.091
0.116	.212*	1.000	.524**	.246**	.279**	.175*	.209*	.211*	.230**	-0.007	0.000
.211*	.190*	.524**	1.000	.328**	.268**	.209*	.169*	0.159	.276**	.173*	0.145
0.162	0.059	.246**	.328**	1.000	.324**	.182*	0.147	0.155	.226**	.243**	0.052
.198*	0.027	.279**	.268**	.324**	1.000	.340**	0.116	0.153	.288**	0.148	0.037
0.035	.184*	.175*	.209*	.182*	.340**	1.000	.398**	.253**	.286**	.267**	.183*
0.012	.304**	.209*	.169*	0.147	0.116	.398**	1.000	.691**	.394**	0.141	.323**
0.032	0.086	.211*	0.159	0.155	0.153	.253**	.691**	1.000	.469**	.263**	.239**
-0.026	0.087	.230*	.276**	.226**	.288**	.286**	.394**	.469**	1.000	.437**	-0.010
0.122	-0.029	-0.007	.173*	.243**	0.148	.267**	0.141	.263**	.437**	1.000	.188*
0.029	0.091	0.000	0.145	0.052	0.037	.183*	.323**	.239**	-0.010	.188*	1.000
-0.026	0.018	0.135	.187*	-0.098	-.173*	0.046	.285**	.364**	0.102	.175*	.372**
0.063	0.065	0.143	.230**	0.086	-0.033	0.086	.192*	.342**	.349**	.307**	0.133
.245**	0.022	0.122	0.135	0.152	-0.004	-0.017	.201*	0.044	0.059	0.084	0.107
.252**	.170*	0.055	0.148	0.087	.185*	0.138	.379**	.243**	0.122	.251**	.312**
.268**	0.049	.295**	.442**	0.215	0.061	0.063	.224**	0.116	.176*	.200*	0.083
.185*	0.087	.253**	.276**	.181*	0.149	0.085	0.063	0.165	0.112	0.043	0.022
.311**	0.004	.183*	.347**	0.149	0.067	-0.015	0.157	.224**	0.028	0.124	.183*
0.146	0.042	.190*	.244**	.302**	0.032	0.149	0.159	.189*	0.134	0.156	0.106
.212*	.226**	.203*	0.146	.173*	0.152	0.124	.261**	.208*	0.112	.253**	0.072
0.167	.175*	0.056	0.159	0.097	0.116	0.067	.199*	0.129	-0.051	0.124	0.165
.199*	.228**	0.150	.180*	0.103	0.116	0.129	0.168	.307**	0.130	.188*	0.091

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

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

N=137

	b25	b26	b27	b28	b29	b30	b31	b32	b33	b34	b35
	.197*	0.167	0.127	.212*	0.147	0.120	0.127	.170*	.190*	0.155	0.161
	.253**	.225**	0.109	.235**	0.120	0.023	.199*	0.164	.283**	0.137	.353**
	.186*	0.160	-0.003	.170*	0.140	0.153	.235**	.222**	.211*	0.057	0.142
	.189*	0.156	-0.058	0.048	0.005	.225**	0.161	0.095	0.068	0.012	.383**
	0.122	0.139	-0.086	.213*	.231**	0.165	0.115	0.109	.233**	0.114	0.154
	.297**	.355**	0.094	0.158	.240**	.199*	0.154	0.043	0.127	0.103	.230**
	.168*	.205*	-0.041	.188*	.237**	.285**	.229**	0.106	0.075	-0.045	.253**
	0.142	0.134	-0.180	0.087	.267**	.193*	0.156	0.164	0.062	-0.002	.179*
	0.012	0.098	0.199	0.081	.321**	.169*	0.057	.245**	0.109	0.089	0.025
	.176*	.213*	0.113	.317**	.231**	0.165	0.081	0.113	.183*	.201*	0.061
	.217*	.266**	.194*	.227**	.405**	0.012	.281**	.170*	0.148	0.121	0.072
	.218*	.185*	0.142	.333**	.424**	.174*	.248**	.247**	.255**	.329**	0.081
	-0.027	0.063	.245**	.252**	.268**	.185*	.311**	0.146	.212*	0.167	.199*
	0.018	0.065	0.022	.170*	0.049	0.087	0.004	0.042	.226**	.175*	.228**
	0.135	0.143	0.122	0.055	.295**	.253**	.183*	.190*	.203*	0.056	0.15
	.187*	.230**	0.135	0.148	.442**	.276**	.347**	.244**	0.146	0.159	0.18
	-0.098	0.086	0.152	0.087	.215*	.181*	0.149	.302**	0.173	0.097	0.103
	-.173*	-0.033	-0.044	.185*	0.061	0.149	0.067	0.032	0.152	0.116	0.116
	0.046	0.086	-0.017	0.138	0.063	0.085	-0.015	0.149	0.124	0.067	0.129
	.285**	.192*	.201*	.379**	.224**	0.063	0.157	0.159	.261**	.199*	0.168
	.364**	.342**	0.044	.243**	0.116	0.165	.224**	.189*	.208*	0.129	.307**
	0.102	.349**	0.059	0.122	.176*	0.112	0.028	0.134	0.112	-0.051	0.13
	.175*	.307**	0.084	.251**	.200*	0.043	0.124	0.156	.253**	0.124	.188*
	.372**	0.133	0.107	.312**	0.083	0.022	.183*	0.106	0.072	0.165	0.091
	1.000	.490**	0.127	.280**	.230**	0.075	.203*	0.055	0.042	.263**	.270**
	.490**	1.000	0.162	.200*	.326**	.259**	.264**	0.138	0.15	.177*	.285**
	0.127	0.162	1.000	.343**	.387**	0.155	0.105	.274**	.214*	.235**	0.002
	.280**	.200*	.343**	1.000	.416**	.239**	.251**	.186*	.344**	.463**	.266**
	.230**	.326**	.387**	.416**	1.000	.362**	.399**	.322**	.258**	.294**	.266**
	0.075	.259**	0.155	.239**	.362**	1.000	.368**	.205*	.202*	.203*	.267**
	.203*	.264**	0.105	.251**	.399**	.368**	1.000	.385**	.313**	.333**	.303**
	0.055	0.138	.274**	.186*	.322**	.205*	.385**	1.000	.347**	.211*	.178*
	0.042	0.150	.214*	.344**	.258**	.202*	.313**	.347**	1.000	.382**	.323**
	.263**	0.177	.235**	.463**	.294**	.203*	.333**	.211*	.382**	1.000	.324**
	.270**	0.285	0.002	.266**	.266**	.267**	.303**	.178*	.323**	.324**	1.000

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

\*Correlation is significant at the 0.05 level (2-tailed).  
N=137

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