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FINANCIAL ANALYSIS AND FISCAL VIABILITY OF SECONDARY SCHOOLS  
IN MUKONO DISTRICT, UGANDA

by

Janet J. Tanner

A dissertation submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree

Doctor of Philosophy

Department of Educational Leadership and Foundations

Brigham Young University

August 2006



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BRIGHAM YOUNG UNIVERSITY


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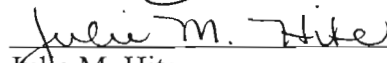
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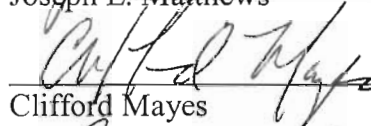
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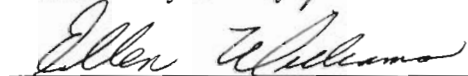
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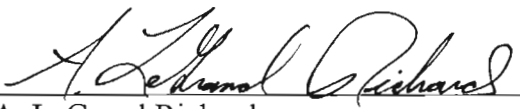
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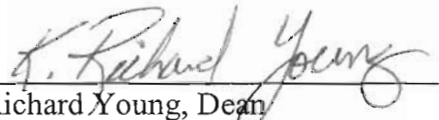
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## ABSTRACT

### FINANCIAL ANALYSIS AND FISCAL VIABILITY OF SECONDARY SCHOOLS IN MUKONO DISTRICT, UGANDA

Janet J. Tanner

Department of Educational Leadership and Foundations

Doctor of Philosophy

Within the worldwide business community, many analysis tools and techniques have evolved to assist in the evaluation and encouragement of financial health and fiscal viability. However, in the educational community, such analysis is uncommon. It has long been argued that educational institutions bear little resemblance to, and should not be treated like, businesses. This research identifies an educational environment where educational institutions are, indeed, businesses, and may greatly benefit from the use of business analyses.

The worldwide effort of Education for All (EFA) has focused on primary education, particularly in less developed countries (LDCs). In Sub-Saharan Africa, Uganda increased its primary school enrollments from 2.7 million in 1996 to 7.6 million in 2003. This rapid primary school expansion substantially increased the demand for secondary education. Limited government funding for secondary schools created an educational bottleneck. In response to this demand, laws were passed to allow the establishment of private secondary schools, operated and taxed as businesses.



Revenue reports, filed by individual private schools with the Uganda Revenue Authority, formed the database for the financial analysis portion of this research. These reports, required of all profitable businesses in Uganda, are similar to audited corporate financial statements. Survey data and national examination (UNEB) scores were also utilized.

This research explored standard business financial analysis tools, including financial statement ratio analysis, and evaluated the applicability of each to this LDC educational environment. A model for financial assessment was developed and industry averages were calculated for private secondary schools in the Mukono District of Uganda. Industry averages can be used by individual schools as benchmarks in assessing their own financial health. Substantial deviations from the norms signal areas of potential concern. Schools may take appropriate corrective action, leading to sustainable fiscal viability. An example of such analysis is provided. Finally, school financial health, defined by eight financial measures, was compared with quality of education, defined by UNEB scores.

Worldwide, much attention is given to education and its role in development. This research, with its model for financial assessment of private LDC schools, offers a new and pragmatic perspective.



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I have been particularly fortunate to have the superb guidance and academic mentorship of Steven J. Hite. His wisdom, wit, and research expertise are deeply appreciated. He is uncompromising in his academic integrity. Julie M. Hite, a major committee member and custodian of the survey dataset, also provided insightful consultation and mentoring. Other mentors on this “dream team” dissertation committee included Joseph L. Matthews, Clifford Mayes, and Ellen Williams. Each has made substantial and unique contributions to this project. All have been truly influential and supportive.

This work would not have been possible without the educational examples and support of my children. Jeff, Jamie, Danny, and Melissa have given freely of their time and expertise. They, along with Jeff’s wife, Mary, joined me in Uganda for the initial field research. They set aside their own baccalaureate and graduate studies from time to time to offer critical review and perspective. During the course of my doctoral studies, all have been actively involved in NGO poverty alleviation efforts in less developed countries. They have inspired as well as supported me in my research efforts.

Finally, many more family members, friends, and a wonderful doctoral cohort have offered emotional, moral, and technical support whenever possible. In the later stages of analysis, a business consultant and friend, John B. Updike, spent countless hours proofing and verifying financial data and statistical reports. My gratitude also extends to my siblings, particularly Larry S. Jeffery and Duane E. Jeffery, who have inspired me for decades with their own academic research.



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## CHAPTER 1

### INTRODUCTION

Education is critical to the progress of individuals and nations. In his opening speech at the Conference on Education for African Renaissance in the Twenty-first Century, President Thabo Mbeki (1999) of South Africa, stated the following:

If the next century is going to be characterized as a truly African century, for social and economic progress of the African people, the century of durable peace and sustained development in Africa, then the success of this project is dependent on the success of our education systems. (p. 1)

#### Education as a Right, Education for All

Over 55 years ago, the Universal Declaration of Human Rights, proclaimed and adopted by the General Assembly of the United Nations, asserted that “everyone has a right to education” (United Nations, 1948, Article 26.1). Realizing that significant numbers of the world’s population still did not have adequate access to education, the World Conference on Education for All was convened in Jomtien, Thailand, in 1990. Discussions were held, culminating in plans and global commitments to provide education for every human being “to meet their basic learning needs” (UNESCO, 1990, Article 1.1).

Education for All (EFA) acknowledged the need for and challenges associated with providing educational opportunities from early childhood to adulthood. However, much of the real commitment of countries and funding institutions alike focused on Universal Primary Education (UPE) (Delors et al., 1996).

## Education in Uganda

Uganda's formal education system, like that of numerous other African countries, reflects a post-colonial structure with students advancing by examination through primary, secondary, and tertiary levels (Ssekamwa, 1997). Historically, education has not been available to all. Lack of economic resources, racial and religious segregation (Ssekamwa & Lugumba, 2001), and severe political strife have been primary contributing factors. Under the government of President Yoweri Museveni (1986 to present), great strides have been made in achieving universal primary education within Uganda (Ndeezi, 2000). Enrollments in primary schools increased from 2.7 million in 1996 to 7.6 million in 2003 (Miovic, 2004; MOES, 2004a). As a midpoint perspective during this growth period, it is noted that in 1999/2000, gross primary enrollments were calculated at 124% and net primary enrollment was 93% (Liang, 2002).

In a World Development project assessment report, Ingram (2004) offered this perspective on the rapid expansion of education in Uganda:

'Big bang' expansion of primary enrollments has long-term downstream fiscal implications beyond just the primary sub-sector. Uganda is confronting the need to increase capital and recurrent funding to post-primary education, now that pupils in the universal primary education (UPE) bulge are completing the primary cycle. ( p. x)

Analyzing the broad implications of this problem, Yusuf K. Nsubuga, Commissioner for Secondary Education, stated "failure to absorb the growing number of primary school leavers will undermine Universal Primary Education and broader national goals like the elimination of poverty" (Kirungi, 2001, p. 2).

The government of Uganda recognized the great need and demand for secondary schooling, but limited financial resources hampered its ability to respond. An alternative solution was offered with the passing of the Local Governments Act of 1997. This Act had the effect of decentralizing control of education, thereby allowing more private secondary schools to be established (D. B. Holsinger, J. Jacob, & C. Mugimu, 2002a; MOES, 2001; Uganda, 2001). A proliferation of these schools followed, and by 2002 there was a total of 1,390 community and private secondary schools (not government funded), compared with 490 government secondary schools (partially government funded) (Liang, 2002). Consequently, total secondary school enrollments increased from 445,000 in 1997 to 759,000 in 2003 (Miovic, 2004). Essentially, these new private secondary schools were established and are being run and taxed as business entities ("The income tax act cap. 340," 1997, p. 7034).

The success of these private secondary schools is, at least in part, dependent upon their ability to remain financially viable. In the absence of guaranteed revenue streams, generally via government or private funding, these entities, like all other business entities, face the realities of competition for clients and the need to maximize revenues (financial resource inflows) while minimizing expenses (financial resource outflows).

#### Financial Assessment in Education

Studies relative to finances and education in a broad, global context have primarily focused on such measures as social and private returns on investment (Pritchett, 2004) or the relationship between financial inputs and student outputs (Ardon, 1999). In recent decades, financial educational analysis has been most visible in the production function model which aggregates data and then seeks to distill the entire analysis to a

single measurement (Greenwald, Hedges, & Laine, 1996; Hanushek, 1997). While these types of analyses may be helpful at the policy level, they provide little benefit to fledgling private school businesses in need of specific, non-aggregated indicators as they work toward financial stability and long-term fiscal viability for their individual institutions.

There has been growing global usage of business concepts, such as accountability and product quality, applied to the education context (Huitt, 2004; Watkins, Watt, & Buston, 2001). However, basic financial assessment models used to measure financial health of business entities have not often been applied to education. These models, so commonly used in business throughout the world that *industry standards* have been developed, look at such measures as short-term profitability, efficiency, and long-term viability (Ketz, Doogar, & Jensen, 1990). This lack of application to the educational context is understandable. Schools are generally viewed not as businesses but as extensions of governmental entities or well-heeled religious or charitable organizations with relatively unlimited streams of resources flowing to them, lack of a demand-driven repeat market, and non-differentiation of “product” (Hartzell, 2003). However, as more schools are established and run as businesses without governmental guarantees of funding and in response to market demand for services, the need increases for appropriate tools to be identified which can assist in establishing and maintaining the financial health of these educational business entities.

### Business Analysis as a Tool

#### in Assessing Organizational Financial Health

In a competitive marketplace, managers (internal stakeholders), investors, and creditors (external stakeholders) are constantly searching for ways to assess the financial

health of a company. Business analysis tools have a long history of usage (Bliss, 1923; Ketz et al., 1990; Lewellen, 2005; C. C. Marsh, 1850; Tamari, 1978). Based on financial information and prescribed financial statements prepared according to *generally accepted accounting principles* (GAAP), specific ratios are identified for internal and external analysis (Gates, 1993). Indeed, many college courses and textbooks specifically address this widely recognized field (Bernstein & Wild, 2000; White, Sondi, & Fried, 1998). Outside the realm of academic instruction, there are many “how to” books (Helfert, 1997), trade organization publications (IOMA, 2003), and even online sources (Dun & Bradstreet, 2001; ZeroMillion.com, 2005) that address and teach financial analysis of organizations.

The similarity of the secondary school market in Uganda to other service sector businesses suggests that, through the use of common business assessment practices applied to actual school financial data, a model of fiscal viability can be developed. In an industry (private secondary education in economically developing countries) where there is no known standard for financial health assessment, such a model, to be refined over time through additional analysis, would serve as a baseline for comparison, study, and for evaluation of individual entities against an industry standard. The use of industry standards is common, globally and across industries, and serves as a barometer for financial health assessments (Ketz et al., 1990). It has long been recognized that financial ratios and models are relatively uniform within industries but differ across industry lines (M. C. Gupta & Huefner, 1972). Private schools form a substantial portion of secondary education in many developing countries (Holsinger & Cowell, 2000).

Therefore, it is imperative to develop industry standards for this newly emerging industry—the private secondary school sector in developing countries.

#### The Gap (Research Problem)

EFA, with its emphasis on UPE, has created a demand for secondary school education in Uganda. Although many private schools have been established to address this demand, there are no guidelines or models for financial viability and success in this industry. This is in this environment of relatively impoverished customers/clients (students) who have great expectations of personal benefits, including increased likelihood of employment opportunities, but who lack access to resources to fund their educations. It is imperative that these non-government funded schools, generally run as businesses, deliver the best product at the best price. In other industries, models of financial health have been developed as guidelines and benchmarks. Business analysis tools, particularly financial ratio analysis, are used to measure financial health. Identification of weaknesses in financial composition of an organization, coupled with subsequent appropriate action, can lead to improved financial health, efficiency, and long-term viability (Miller & Miller, 1991). In the educational market no such model exists to serve as a beacon and guide to these fledgling schools.

#### *Research Questions*

Three research questions will be addressed. They relate to development of a model for the assessment of fiscal viability for secondary schools in the Mukono District of Uganda.

1. Using business models for financial assessment, what analysis tools and financial ratios may be effectively applied to private secondary schools in Uganda in developing a model of fiscal viability?
2. What transformations or modifications to standard business models of financial assessment are required to build an appropriate model of fiscal viability for private secondary schools in an economically developing country?
3. Using quantitative analysis, is there an apparent link between this newly developed model and the standard quality measurement of student performance, i.e., Uganda national examination scores (J. M. Hite, S. J. Hite, C. B. Mugimu, J. W. Rew, & Y. Nsubuga, 2004b)?

#### *Purpose*

The purpose of this research is to develop and test a model of fiscal viability by applying time-tested business analysis tools, including financial ratio analysis, to private secondary schools in the Mukono District of Uganda. The majority of these schools were essentially conceived, established, and are currently run as entrepreneurial businesses. Chapter 2 contains a review of the literature utilized in this project.

#### Methodology

A complete discussion of methodology used in this research is found in Chapter 3. Briefly, activities using previously collected data were performed in preparation for this project. They are as follows:

1. All secondary schools with UNEB (national testing center) status within the Mukono District of Uganda as of June 30, 2003, were identified.



2. Student performance data in the form of national examination scores were obtained for these schools.
3. A list was compiled of schools responding that they have filed revenue reports. These financial statements are required of all businesses in Uganda for taxation purposes.
4. Revenue reports were obtained for all schools that had filed.

All previously collected data are covered under the Institutional Review Board (IRB) Research Proposal granted to Dr. Steven J. Hite, Department of Educational Leadership and Foundations, School of Education, Brigham Young University (BYU), Provo, Utah, which is dated May 5, 2003 (see Appendix B). Access to this data for purposes of this research proposal has been granted by both of the principal investigators, Dr. Steven J. Hite and Dr. Julie M. Hite.

Additional steps were taken in the analysis phase of this research project. They address the above stated research questions.

1. The revenue reports were reviewed and analyzed using the theoretical framework of an exploratory data analysis approach (Hoaglin, Mosteller, & Tukey, 1991; Tukey, 1970).
2. Determination was made of the appropriateness and applicability of standard business financial analysis tools, in this educational setting utilizing the theory of mindfulness advocated by Brody and Coulter (2002) in application to dynamic business environments.
3. A model for assessing fiscal viability for private secondary schools in the Mukono District of Uganda was developed.

4. The model was tested by comparing the financial health/fiscal viability of the respective schools with their students' examination scores in order to determine if any relationship exists between institutional financial well-being and quality of student performance.

Data analyses were performed using Excel and SPSS computational and statistical programs. Findings of these analyses are presented in Chapter 4. Chapter 5 provides an interpretation of the findings and their implications.

#### Perceived Benefits of this Research

It is anticipated that this research will have multiple benefits. Among them are the following

1. Generate baseline industry averages and a model for assessing fiscal viability of private secondary schools in the Mukono District of Uganda.
2. Stimulate further discussion and research on the relationship between fiscal viability and quality of education.

#### Clarification

The first three chapters of this document were written before actual data analysis was performed. These chapters have been slightly modified to reflect the fact that the research and analysis have now been conducted.

In exploratory research, findings inform and guide the researcher to further analysis and findings. This iterative, informative analysis process may provide clarification and refinement of the research issues, including research questions.

A description of the exploratory research process used in this project is presented in Chapter 5. A discussion is also included regarding the clarification of concepts and terms, as well as refinement of the wording of the research questions.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Introduction to Literature Review

The twenty-first century dawned with the world connected in a way previously unknown. Globalization has become a commonplace term. Its implications are profound. No longer can world citizens live in isolation, unconcerned about their neighbors and their neighbors' well-being. Global organizations dominate many arenas and are manifest in structures as diverse as governmental alliances, religious and philanthropic institutions, and business corporations. Although our motives and objectives may differ, all attest to the fact that almost every facet of our lives is affected by some global influence.

Great world wars, both militaristic and ideological, were fought in the century past. This new century brings new understanding and concerns, and also new technologies to address age-old problems. It is with the hope of wisdom garnered from past experience that we look outward, as well as inward, for solutions.

The problems of inequality, injustice, poverty, and lack of opportunities for growth and development are not new. However, the structures created to address these problems on a global scale have generally been created since the middle of the last century. In particular, the United Nations, with membership covering virtually all of the recognized nation states of the world, was created, in part, to advance the cause of human rights and human development. Much effort has been made to formulate specific goals and related time tables for accomplishing them with continual monitoring and assessment.

This study primarily focuses on the case of education, proclaimed in 1948 by the United Nations as a basic, fundamental human right for all (United Nations, 1948).

Other human rights and development issues play closely into the education scenario but will be addressed only as deemed necessary.

Government intervention alone has not provided sufficient answers to all the questions and challenges surrounding education on a worldwide basis. Looking to other frameworks to inform the situation, it can be seen that there may be extremely helpful tools in common usage in the business world that have the potential of furthering the cause of education.

This review of literature chronicles the development, progress, and evolution of education in the realm of public global intervention. The author also discusses the massive global emphasis on UPE. The state of education and related challenges in less developed countries is presented. Focus is directed to Sub-Saharan Africa, specifically Uganda. In Uganda, great increases in numbers of students completing their primary education has created a demand for secondary education, for which public funding is insufficient. Private schools have emerged to meet this educational demand. To best serve all stakeholders, it is necessary that these institutions be financially stable (fiscally viable). Next, the author shifts attention to the business world, exploring the tools that are commonly used to assess the financial health of organizations. Arguments for and against the use of business principles in educational settings are addressed. Finally, the author makes the case for application of business tools to assess financial health of secondary schools in the Mukono District of Uganda, thus laying the foundation for the creation of a model for assessment of fiscal viability.

## Education as a Right, Education for All

Education, its purposes, importance, and implications are global in nature. It is a universal right and affects all people, everywhere.

### *Importance of Education in a Global Context*

Throughout history, education has been widely acknowledged as having primary importance in most civilizations, nations, and communities. Educational issues of every sort have been discussed and researched. Education for whom, by whom, and provided in what manner have been central themes of discussion from the kitchen table to halls of government to world forums (Belfield, 2000).

In recent decades, education has been specifically acknowledged as an effective vehicle for personal improvement. Education has also been accepted as a primary component in the overall advancement of nations, their economic growth, and the alleviation of poverty (Belfield, 2000; Bruns, Mingat, & Rakotomalal, 2003; Glewwe, 1999; Greenspan, 2004; Schultz, 1993).

### *Education as a Fundamental Human Right*

Shortly after its establishment, the General Assembly of the United Nations issued the Universal Declaration of Human Rights (United Nations, 1948). Article 26 identified education as a basic human right. This Article asserts, in part, that everyone has a right to free basic education; that elementary education should be compulsory; that additional education should be available to all on the basis of merit; that education should address the need for personal development, tolerance, and freedom; and that parents have the right to choose their children's education.

However, simply declaring education to be a right of all people did not guarantee that it would become a reality. Despite the efforts of many institutions, individuals, and governments throughout the world, education for every human being, like many other basic recognized human rights, has been neither easily nor universally achieved.

### *Education for All (EFA)*

Acknowledging that some progress had been made, but concerned with the vast number of world inhabitants who still lacked access to education, the United Nations (UN), through United Nations Educational, Scientific and Cultural Organization (UNESCO), called for a World Conference on Education for All (EFA). The conference was to be held in Jomtien, Thailand, in March 1990.

At the Jomtien EFA conference, discussions were held and plans were drawn. The international community committed to provide worldwide education for every human being “to meet their basic learning needs” (UNESCO, 1990, Article 1.1). One hundred and fifty governments promised their support to achieve this far-reaching vision of education for all. They specifically committed to the goals of cutting the world adult illiteracy rate by one-half and providing accessible primary education to all children by the year 2000. While EFA acknowledged the need for and challenges associated with providing educational opportunities from early childhood to adulthood, much of the real commitment of countries and funding institutions alike focused on UPE (Delors et al., 1996).

Although the goals of EFA encompass a variety of specific concerns, only those relevant to primary and secondary education will be specifically addressed in this paper. Hence, other important areas of education such as adult literacy, vocational training,

gender equity, and tertiary education lie beyond the main focus of this study and will be discussed only in passing.

### *EFA Mid-decade Review*

In order to assess progress being made towards EFA's millennial goals, the UN General Assembly passed a resolution in December 1995 for a mid-decade review. Consequently a mid-decade meeting of the International Consultative Forum on Education for All was held in Amman, Jordan, in June 1996. In that forum, the benefits and necessity of education were re-affirmed. UNESCO (1997a) made the following assertion:

Education is empowerment. It is the key to establishing and reinforcing democracy, to development which is both sustainable and humane and to peace founded upon mutual respect and social justice. Indeed, in a world in which creativity and knowledge play an ever greater role, the right to education is nothing less than the right to participate in the life of the modern world. (p. 2)

All countries were called upon to engage in self-examination and to report their achievements and shortfalls in relation to their specific country's goal of EFA. In addition to country reports, the conference addressed other sources of information such as worldwide statistical reports submitted to UNESCO, country case studies, a cross-sectional survey of the conditions of schools in lesser developed countries, and NGO (non-governmental organizations) and donor reports. The general picture that emerged was one of some statistical progress, particularly in the increase in numbers of children (approximately 50 million more) aged 6-11 who were now in school. However, this perceived progress was not without shortfalls and concerns (UNESCO, 1997a).



Challenges, both continuing and those recently identified, were summarized in the Amman Affirmation in June 1996. Conference leaders called for governments of the world to set definitive targets and timetables for their achievement.

*The EFA 2000 Review*

Ten years after the inception of Education for All, another conference, The World Education Forum, was held at Dakar, Senegal, in April 2000, to review progress towards EFA, especially with respect to concerns set forth in the Amman mid-decade review. In this conference, the largest evaluation of education in history was undertaken. Over 1,100 participants from 164 countries attended. Data was gathered by country and synthesized into regional reports which provided the most comprehensive picture ever of education in the global context (UNESCO, 2000c).

Participants acknowledged that much had changed in the world between the years of 1990 and 2000. Technology had greatly advanced methods of communication and information dissemination. The worldwide web and internet capabilities increased opportunities for education, support, and research. However, this connective capability for some has also been seen as widening the gap between educational opportunities in wealthy countries versus those available to the citizenry of low income nations (UNESCO, 2000c).

The World Education Forum of 2000 re-affirmed the intent and goals of the 1990 Jomtien World Declaration on Education for All, called for higher levels of political commitment, and solicited greater technical and financial resource mobilization. Focus was to be at the country level, the “heart of EFA.” Goals, policies, funding strategies, and monitoring would be set on an individual country basis. A new target date for

reaching EFA was set for the year 2015 (UNESCO, 2002a). In addition, the Forum adopted the Dakar “Framework for Action” with its six specific goals, including universal free compulsory primary education, and improved quality of education.

### *Millennial Development Goals (MDGs)*

In a separate action, closely related to the EFA efforts but much broader in perspective, the Millennium Summit at the United Nations headquarters in New York addressed what were viewed as the greatest world challenges of the new millennium (UNICEF, 2000). The importance of this summit is underscored by the fact that it was the largest gathering of world leaders ever to take place.

The United Nations adopted the Millennium Declaration on September 8, 2000, in its eighth plenary meeting (United Nations, 2000). This document provided the basis for establishing eight “Millennium Development Goals”, now commonly referred to as MDGs. All 191 United Nations Member States pledged to support these goals, aimed primarily at reducing the problems associated with worldwide poverty (United Nations, 2005d). The MDGs bore a target date of 2015 (Chioke.org, 2005; tearfund.org, 2005; United Nations, 2000).

Like EFA, the MDGs target universal primary education (UPE) (United Nations, 2005d). Support for UPE is extremely broad, to the point that it is perceived as a “given” in most discussions of poverty alleviation and development. Efforts to establish effective implementation plans and evaluate progress towards the MDGs have been made on a continuing basis since their adoption (Bruns et al., 2003; Jayasuriya, 2003). The “Millennium Development Goals Report 2005” brings together research and data contributed by such organizations as The World Bank, World Health Organization,

UNESCO, Economic Commission for Africa, and the World Trade Organization (United Nations, 2005b). Preparers of this report note that while some developing regions of the world are approaching universal primary enrollment, “in sub-Saharan Africa, fewer than two-thirds of children are enrolled in primary school” (p. 4).

Hosted by the United Nations, a “Millennium +5 Summit” took place in September 2005 to evaluate progress (or lack of progress) in achieving the MDGs of the United Nations Millennium Declaration. At this summit, “many calculated that the world would not meet the UN goals in one hundred years, let alone by 2015” (GPF, 2005). While many nations and authors laud the intent of the MDGs, others contend that the goals are largely unrealistic and unattainable. Furthermore, in some cases where primary school enrollments have increased, these increases have often come at the expense of the quality of instruction and have resulted in high dropout rates. Still, many people argue that the goals do focus world attention on issues of great concern in the realm of education for all (M. Clemens & Moss, 2005).

In October of 2005, UNESCO’s Ministerial Round Table on EFA reaffirmed its commitment to the Dakar Framework and also to the Millennium Development Goals on the basis that education is a fundamental human right. The report stated that there has been “notable progress towards the 2015 targets evident in many countries, such as the sharp increases in primary school enrollment in Sub-Saharan Africa and South Asia” (UNESCO, 2005a, p. 2).

#### *EFA Summary*

Education is seen as a fundamental human right that must be protected and advanced through formal international organizations and forums. Beginning with the

Jomtien Conference in 1990, UNESCO and many other international organizations have encouraged governments to set goals and to give higher priority and effort to providing education for all. Some positive strides have been made. The world has seen significant increases in the total numbers of students enrolled in primary school. However, increases in global average enrollments mask large regional differences. “Sub-Saharan Africa has the lowest completion rate by far, with barely half of all school-age children completing primary school” (Bruns et al., 2003, p. 3).

### Education in Uganda

To better understand education in Uganda, it is necessary to examine the backdrop of education in developing areas in the world and education in Africa, specifically Sub-Saharan Africa. Historical, political, and economic perspectives inform this discussion.

### *Education in Developing Regions of the World*

Without digressing into a lengthy discussion regarding the many causes and implications of poverty, the author notes that education has long been seen as a critical factor in the reduction of poverty and the building of self-reliant nation states (Aoki et al., 2003; Caillods, 1998; Watkins, 1999). Addressing the World Education Forum, World Bank President James D. Wolfensohn stated “No country has succeeded without educating its people. Education is key to sustaining growth and reducing poverty” (Wolfensohn, 2000, p. 1).

A recent World Bank (2006) statement provides an excellent summary of the situation, and also addresses the impact of Education for All and the Millennium Development Goals:

Education is development. It creates choices and opportunities for people, reduces the twin burdens of poverty and diseases, and gives a stronger voice in society. For nations it creates a dynamic workforce and well-informed citizens able to compete and cooperate globally—opening doors to economic and social prosperity. The 1990 Conference on Education for All pledged to achieve universal primary education by 2000. But in 2000, 104 million school-age children were still not in school, 57 percent of them girls and 94 percent were in developing countries—mostly South Asia and Sub-Saharan Africa. The Millennium Development Goals set a more realistic, but still difficult, deadline of 2015 when all children everywhere should be able to complete a full course of primary schooling.” (Goal 2)

These assertions underscore the position that education is a critical key to the success and development of struggling nations—and that Sub-Saharan Africa is struggling in providing this education.

#### *Africa and Sub-Saharan Africa*

While Africa is often discussed in various literature and contexts as an entire continent, there are marked differences between the lifestyles, cultural, political and economic concerns of those relatively few northern African countries and those countries south of the Sahara Desert in the region commonly referred to as Sub-Saharan Africa (GlobalSecurity.org, 1997). This region is acknowledged as one of the poorest regions of the world. The World Bank recognizes 155 countries as “developing countries” (Bruns et al., 2003). Of the 50 countries worldwide that bear the dubious distinction as *least*

*developed countries* or LDCs, 34 are located in Africa. Furthermore, all of those 34 are Sub-Saharan countries (United Nations, 2005e).

Experts have advanced possible explanations for this concentration of poverty in Sub-Saharan Africa. Jeffrey Sachs asserts that much of the poverty can be explained through geography, ecological zones and the diseases inherent therein (Sachs, 2005). Other possibilities include the left-over effects of colonial conquest (Shinns & Lyne, 2004), and political instability (Tupy, 2005). Acknowledging that conflict is a huge contributor to poverty, the UN in June 2005 disclosed its findings that “extreme poverty had actually increased in Sub-Saharan Africa since the 1990s” (United Nations, 2005c).

In addition to poverty, Sub-Saharan Africa has faced difficult natural and man-made disasters in recent years, including droughts, famine, floods, armed conflicts, civil wars, genocide, heavy debt, government corruption, and ravaging diseases, particularly Human Immuno-deficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) and malaria (Dunne & Mhone, 2003; UNESCO, 1999). Unfortunately, some of these disasters link together with awful synergy. For example, a causal correlation is seen between armed conflict and the spread of HIV/AIDS via rape, displaced refugees forced into survival sex, and the breakdown of the stable family unit (Katel, 2005; UNICEF, 2003, 2005). The impact of HIV/AIDS on education in Sub-Saharan Africa is addressed later in this chapter.

Inequity is also an issue in Sub-Saharan Africa. Huge gaps exist between the wealthy countries of the world and those of the Sub-Saharan Africa developing nations. Within each country gaps are common—in wealth, in power, in access to resources, and in opportunities. Equity gaps often lead to instability and conflict (J. Tanner, 2004).

Many experts and individuals believe that providing education for all will play an integral role in closing the gaps of inequality (The World Bank, 2005d).

### *Education in Africa and Sub-Saharan Africa*

African countries have generally relied on the models and systems of education that were imposed on them by their European colonizers. Little has changed in these educational systems in the thirty-five or so years since these countries gained their independence. While the elite have generally had access to education that is on par with that available in more educationally advanced countries, the masses have generally been deprived of even basic education (Delors et al., 1996; Holsinger & Cowell, 2000; Watkins, 2000).

Although espoused by many countries across the continent, the effort to provide equal access to formal education has been hampered. Critical factors include inadequate government funding, required school fees, and centralized education systems which concentrated their focus on urban areas and largely ignored those in scattered rural settings (Bentaouet Kattan & Burnett, 2004; Delamonica, Mehrotra, & Vandemoortele, 2004; Watkins, 2000).

As a continent, Africa still lags behind most of the world in education. According to the World Development Report 2006, “The mean educational attainment level for adults born in 1975-79 in Sub-Saharan Africa remains at 5.4 years, compared with 10.1 years in Latin American and Caribbean and 13.4 years in developed countries” (The World Bank, 2005d, p. 4). Areas of concern that continue to plague the region of Sub-Saharan Africa include gender disparity in schooling, the lowest school enrollments of all

regions of the world, high repetition rates, low completion rates, and limited minority access to secondary and tertiary education (UNESCO, 2004c).

Poverty affects and is affected by education (Holsinger, 2005; UNESCO, 2004d). According to the Millennium Development Goals Report 2005, “in sub-Saharan Africa, fewer than two-thirds of children are enrolled in primary school” (p. 4) and there is some question as to the quality of the education offered to those who are in school (United Nations, 2005b, p. 4). Educational issues in Sub-Saharan Africa factor into the most pressing challenges in global development today (The World Bank, 2005d).

#### *The Impact of HIV/AIDS on Education in Sub-Saharan Africa*

The HIV/AIDS virus has affected health and society in Sub-Saharan Africa in a number of ways. Parents, children, and teachers all have been affected and that has impacted education. A recent World Bank publication states, “...the AIDS pandemic is devastating the teaching force and undermining the entire educational fabric” (The World Bank, 2005c, p. 1).

The World Education Forum of 2000 was held in Dakar, Senegal, a Sub-Saharan location that served as a poignant and urgent reminder of the growing impact of HIV/AIDS on education. Speakers noted that progress made towards Education for All could easily be negated by this pandemic. Parents were unlikely to educate a sick child and orphans were left with few resources or incentives to remain in school (UNESCO, 2000c). In addition, the supply of trained teachers was severely challenged (Aoki et al., 2003). AIDS has killed one or both parents of an estimated 15 million children worldwide; 12 million of these are in Sub-Saharan Africa (UNICEF, 2000). Orphans face higher likelihood of dropping out of school, rendering them less likely to escape the



bonds of continued poverty (Aoki et al., 2003) or to be educated about HIV/AIDS transmission and protection (United Nations, 2005b).

Many countries ravaged by HIV/AIDS are struggling to train teachers quickly enough. UNESCO reported in its World Education Forum document that in one Sub-Saharan country an alarming “two-thirds of newly trained teachers die of AIDS each year” (UNESCO, 2000c, p. 22). Such attrition in the teacher ranks, coupled with high absenteeism due to illness, calls into question the quality of education (Delamonica et al., 2004).

A study by De Walque (2003) asserts that there is a definite relationship between education and HIV/AIDS. The more educated the individual, the more receptive they are to HIV information campaigns and the less likely they are to engage in activities that would infect them (De Walque, 2003).

#### *EFA Progress and Assessment in Sub-Saharan Africa*

Noted progress has been made in the area of EFA in Sub-Saharan Africa. A 1996 UNESCO report found that few African countries had attained primary education for all and some had only 4 or 5% enrolled in secondary school (Delors et al., 1996). Only four years later, the Senegal World Forum for Education 2000 claimed that great progress had been made throughout the world. EFA was declared to be a realistic and achievable goal (UNESCO, 2000a). However, two areas in the world still lagged behind the others in this progress: Southeast Asia and Sub-Saharan Africa.

The EFA Global Monitoring Report 2003/2004, prepared by UNESCO (UNESCO, 2004b), provides a relatively up-to-date look at Education for All in Sub-

Saharan Africa. The report identifies three actions which will define the achievement of EFA in that region:

1. Ensure free and compulsory primary education by 2015,
2. Expand adult literacy by 50 percent by 2015,
3. Eliminate gender disparities in access to education by 2005 and achieve gender equality by 2015.

The report then assesses progress made to date by each country and categorizes them as to their potential for achieving these three goals. It was found that six have a “high chance of achieving or having achieved all three goals;” fourteen (including Uganda) were categorized as “at least one goal likely to be missed;” and twenty are at “serious risk of not achieving any of the three goals” (UNESCO, 2004b, p. 1).

A discussion of efforts to achieve EFA in Sub-Saharan Africa would be incomplete without the acknowledgement of multiple external funding organizations. Notably, World Bank has greatly increased its education budget to Africa (Alexander, 2001; UNESCO-BREDA, 2003). Support has also been given through other international organizations including United Nations Educational, Scientific and Cultural Organization /Regional Bureau for Education in Africa (UNESCO/BREDA), United Nations Population Fund (UNFPA, formerly known as United Nations Fund for Population Activities), United Nations Development Program (UNDP), United Nations International Children’s Emergency Fund (UNICEF) and World Food Program (WFP). This assistance has taken numerous forms, from loans to grants to food (UNESCO-BREDA, 2002; UNESCO, 2002b).

Although a great deal of external funding has been made available for the advancement of EFA, funding alone cannot guarantee success. Indeed, some contend that this may not even be the best use of funds (Bregman, 2003). Some challenges to EFA are shared by most Sub-Saharan countries. Some are unique to the country setting. Each country must individually plan its appropriate course of action (UNESCO, 2002a).

### *Uganda*

In many ways Uganda is similar to other Sub-Saharan countries. Yet in others, it is unique. This section provides descriptions of the country, its history, its peoples, and its challenges to help the reader better understand this particular setting.

#### *Statistical, Historical, Demographic and Political Background of Uganda*

Uganda is a landlocked country in eastern Africa. It lies on the equator north and west of Lake Victoria and totals 263,040 square kilometers or slightly smaller than the U.S. state of Michigan. Only 1,809 kilometers of the country's 27,000 kilometers of roads are paved. The most recent statistics available estimate the population of Uganda to be 27,269,482 as of July 2005. Life expectancy at birth is estimated at 51.59 years. However, the median age of the general population is only 14.97 years. Approximately 66% are Christian; 16% are Muslim and 18% follow tribal religions. It is estimated that 69.9% of the population aged 15 or older is literate. Population growth rate for 2005 is estimated at 3.31%. Public debt makes up 73.9% of Gross Domestic Product (GDP). External aid received in 2000 amounted to \$1.4 billion. In comparison, the 2004 national budget estimated \$1.491 billion in revenues, with \$1.727 billion in expenditures. In 2001, an estimated 35% of the population fell below the poverty line. A 2004 estimate of GDP per person, expressed in terms of purchasing power parity, was \$1,500. Inflation

was estimated at 3.5% in 2004. Uganda is a republic, based on English common law and customary law. Its current constitution was adopted October 8, 1995. In addition, there are 1.4 million internally displaced persons in Uganda and over 200,000 refugees who have fled from neighboring countries (CIA, 2005).

The 2005 World Population Data Sheet highlights other facts of interest which may have bearing on the educational climate of Uganda. Of the population aged 15-49, 7.1 % have HIV/AIDS. Less than 2% of the population are aged 65 or older. A full 97% of the population live on less than the equivalent of \$2 per day (PRB, 2005).

Uganda, a former British Protectorate in eastern Sub-Saharan Africa, achieved independence in October of 1962. This nation is comprised of many ethnic groups, none of which has majority status. About 40 languages are spoken in Uganda. English is the official national language. Luganda and Kiswahili are also widely spoken and may be the language of instruction for lower levels of primary school (Ssekamwa, 1997). Uganda is one of 50 countries of the world grouped into the economic and sociopolitical category, *less developed countries* (LDCs) (United Nations, 2005a).

Civil unrest and political strife since its independence have had a huge and debilitating effect on this country. The world was shocked at the violations of human rights under the military dictatorships of Milton Obote (1966-1971 and 1980-85) and Idi Amin (1971-1979) (Melady & Melady, 1977).

Historians estimate that 350,000 people were murdered during Amin's rule. During British rule, many Asians were brought into Uganda. In the 1970s, 50,000 to 55,000 Asians, mostly Indian merchants, were expelled and their businesses and homes were often given to Amin's cronies. This expulsion had unforeseen and devastating

effects on the nation's economy (IMDb, 2005; Jamison, 1992). Many of the wealthy and/or best educated, including teachers and professionals, were murdered or forced to flee for their lives.

The U.S. Department of State asserts that Ugandan security forces under Obote's rule had one of the world's worst human rights records (U.S. Department of State, 2005). It is estimated that 100,000-300,000 lives were lost under his rule (Answers.com, 2006). These atrocities left Uganda in a state of political and economic chaos and drained or diverted many of the financial resources that could otherwise have been utilized for public services such as health and education.

Yoweri Museveni became President of Uganda January 29, 1986, and remains in that position to the present. There are still armed conflicts within the northern and eastern boundaries of Uganda, primarily with the rebel group referred to as The Lord's Resistance Army (LRA) (IDMC, 2005; Internal Displacement Monitoring Service, 2005). Although from time to time this armed conflict garners negative international attention, Museveni has generally been seen as bringing stability to the country. He has been recognized by the West as one of Africa's most influential leaders (Council on Foreign Affairs, 2006; Council on Foreign Affairs, 2006; Matsamura, 2005a). Recently, Museveni has drawn international and internal criticism, however, for instigating a constitutional change which would allow him to seek a third term in office (Matsamura, 2005b; The New Vision, 2005). This change allowed him to be re-elected in February of 2006 for his third term of office (Lacey, 2006). Whether this move, perceived by some as power-mongering in the disinterest of his constituents (Matovu & Matovu, 2005), will erode his effectiveness as a leader is yet to be seen.

### *Education in Uganda*

Historically, Uganda had a strong, indigenous education system where life skills were taught through presentation, repetition, and practice. Students were trained in skills that would benefit their daily lives and fit them for a constructive role in their society. In 1877, European Christian missionaries introduced a more formal type of education with literacy and numeracy. Schools were generally church-run. In the early 1900s, some public schools were introduced. After Uganda's independence from Britain in 1962, there was a movement to strip schools of their religious identities. Years of war and internal strife stagnated much of the educational progress envisioned at the time of independence (Ssekamwa, 1997). Surprisingly, although Uganda suffered greatly from extreme political turmoil following its independence (Uganda, 2001), primarily at the hands of the Obote and Idi Amin regimes, its formal education system did not entirely collapse (Paige, 1998).

The current formal school system structure in Uganda, in place since the early 1960s, is described as a 7-4-2 system and is driven by compulsory national examinations. (See Table 2.1.) It begins with seven years of primary school, after which the student must pass the Primary Leaving Examination (PLE). Successful candidates may move on to secondary school, the first four years of which are considered to be lower or "O" (Ordinary) level. After the completion of this four year sequence, students sit for national Uganda Certificate of Education (UCE) O-level exams. The successful candidate may then move on in secondary school for another two years of coursework at the "A" (Advanced) level, after taking the Uganda Advanced Certificate of Education (UACE) examination. Students' marks on the UACE position them to compete for

Table 2.1

*Formal School System in Uganda*

Level	Duration (yrs)	Ages (yrs)	Terminal Exam
Primary	7	06 - 13	UPE
Lower Secondary (UCE)	4	14 - 18	UCE
Upper Secondary (UACE)	2	19 - 20	UACE

*Note.* From C. B. Mugimu (personal communication, November 11, 2005). Adapted with permission.

places at one of the eight state universities in Uganda or to look for alternative post-secondary training at teacher training colleges, technical institutes, or colleges of business and commerce (ExperienceAfrica, 2004; Liang, 2002; MOES, 1999; UNESCO).

Schools are run by church organizations, non-governmental organizations (NGOs), government, or private interests. For statistical purposes, schools are often classified as government, community, or private, with very little differentiation being made between community and private (Liang, 2002). Government schools are given that designation because they receive some funding from the Uganda national government. However, this designation does not mean that the government provides all of the funding for these schools. “Government-assisted” or “government-aided” schools would probably be better identifiers. Government assistance may take the form of grants such as “capitation grants” or “capital development grants” (Mugimu, 2004). Other important funding sources for school operations include school fees (which are generally paid by the student’s parents or other sponsors), grants, and loans.

All schools charge fees for attendance, even government-aided schools. Fees may be assessed for tuition, textbooks and materials, uniforms, and “unexpected costs” such as special celebrations, physical facilities construction costs, telephone line installations, PTA contributions, and teachers’ funerals (Bentaouet & Burnett, 2004; Kattan & Burnett, 2004)). The average family in Uganda consists of about eight children (Experience Africa, 2004). These combined factors may put a strain on family resources, thus affecting the ability of some children to stay in school (Bentaouet & Burnett, 2004).

*UPE in Uganda.* Decades of war and widespread poverty caused severe shortages of government funding for education in Uganda. Much of the surviving infrastructure fell into decay. Textbooks and teaching materials were in short supply and there was a general teacher shortage. Trained, experienced teachers faced the challenge of low pay, irregular paychecks, and little support. Parents generally had to bear the burden of the cost for schooling their children, paying for school fees, books and materials, and uniforms. Many of the poor simply could not afford to send their children to school. In the period 1971-1985, only about 50% of primary aged children attended school (MOES, 1999). In addition, corruption led to “leakage of funds” (The World Bank, 2005a, p. 64; XINHUA, 2004).

Aligning with the worldwide education agenda, Uganda’s President Yoweri Museveni led governmental efforts to provide increased access to primary school education. The global emphasis on primary education driven by EFA, coupled with Uganda’s introduction of Universal Primary Education in January of 1997, contributed to tremendous increases in primary school enrollments (Delamonica et al., 2004; UNESCO, 2000b).



Based on President Museveni's 1996 campaign promises of universal primary education for Uganda and free education for up to four children per family, two of which were to be girls (Deininger, 2003), greater government support was given to provide increased access to primary school education (UNESCO, 2000b). UPE was implemented in January of 1997. Immediate and continued increases were seen in primary school enrollments. During the ten year period from 1986 to 1996 enrollments rose only from 2.2 million to 2.7 million. However, in 1997 alone (the year that UPE was implemented) enrollments increased by 94% to 5.3 million (MOES, 2004a). Enrollments continued to rise to 6.5 million by early 2000 and reached 7.6 million in 2003 (Miovic, 2004; UNESCO, 2000b).

These tremendous increases in enrollments have attracted much global attention (UNESCO, 2000b). Hailed as a UPE success story, a UNESCO report calls the results "dramatic and beyond expectations" (UNESCO, 2001, par. 7.2). Indeed, in the numbers game, Uganda has been a leader in achievement of universal primary education (The World Bank, 2005a).

This "big bang" approach to achieving UPE in a short period of time has not been without its difficulty. The huge increase in enrollments without corresponding increases in infrastructure and trained teachers has resulted in overcrowded classrooms, high student/teacher ratios, and widespread concern about the quality of this education (Ingram, 2004; UNESCO, 2001) as well as its sustainability (M. A. Clemens, 2004).

*Challenges related to UPE in Uganda.* The swiftness with which the "free education for 4" primary school policy was implemented (it became law in December 1996 and was implemented January 1997) left no time to build new schools, expand old

ones, or create a master plan for primary school expansion. As a consequence, schools in urban areas quickly became overcrowded and facilities in rural areas were pushed to the point that some schools were forced to meet under trees (Ndeezi, 2000; UNESCO, 2000b). Learning materials were in short supply or at times non-existent. Pupil to teacher ratios shot up to 110:1 in lower levels of primary school (USAID, 2000) and were reported as high as 234:1 in conflict areas (Internal Displacement Monitoring Service, 2005). Such extreme ratios underscore the sad fact that many children had little opportunity for individual attention (Kirungi, 2001).

Another bottleneck occurred in the transition of primary school students to secondary school (Ingram, 2004; Kirungi, 2001; UNESCO, 2005b). While much of the world takes this step for granted, Uganda presents a different picture. Most of the funds earmarked for education go to primary level education, leaving little for the expansion of secondary schools (Liang, 2002). As the number of students completing primary school has increased, the demand for secondary schools has risen dramatically (UNESCO, 1997b).

*Beyond Primary Education.* The demand for secondary education throughout the world is soaring. This is a direct result of the great global emphasis placed on universal primary education (The World Bank, 2005c). However, while the main educational emphasis to date has been on achieving basic education for everyone everywhere, there is also a critical need for secondary school education. A World Bank (2005b) report states

In today's world, secondary education has a vital mission....Secondary education is now being recognized as the cornerstone of educational systems in the 21st century. Quality secondary education is indispensable in creating a bright future

for individuals and nations alike....There is no question that secondary education has a key role to play in the social, economic, and human capital development of countries around the world. (p. 1, 6)

With the implementation of UPE and subsequent swelling numbers of primary school graduates, it soon became evident that if these students were to advance beyond primary school, new and dramatic measures would have to be taken to provide that opportunity (MOES, 2004b). Government funding, tied to international funding sources such as World Bank, USAID, the Netherlands government, Denmark and Britain, generally focused on primary schools, leaving few resources for post-primary education (Liang, 2002; UNESCO, 2000b).

Uganda's Local Government Statute of 1993 had the effect of decentralizing primary and secondary school administration and management, priming the climate for more local control of schools (MOES, 1999). The Local Government Act of 1997 further decentralized public education and opened the door to greater private investment in educational institutions (UNCHS).

### *Secondary Schools in Uganda*

Kirungi (2001) underscores the importance of secondary schooling in Uganda with the following statement by Yusuf K. Nsubuga, Commissioner for Secondary Education. "Failure to absorb the growing number of primary school leavers will undermine Universal Primary Education and broader national goals like the elimination of poverty" ( p. 2).

Although some may assert that primary education is adequate in a developing country setting, there is strong argument that secondary education has an important role

to play in personal development, human capital expansion, nation building, and economic development (Government of Uganda, 2003; Holsinger & Cowell, 2000; Lewin & Caillods, 2001b; UNESCO, 2005c). Higher-order thinking skills and problem solving are generally introduced at the secondary school level. Math, science, and technology capabilities are built during this phase of a student's education. Although the costs associated with secondary education are higher on a per student basis than those of primary schools, the skills learned at this level are critical to the development and progress of the country (Aoki et al., 2003).

Table 2.2 shows the rapid increase in the number of secondary schools in Uganda from 1997 to 2001. The number of secondary schools in Uganda almost quadrupled in this period.

Table 2.2

*Number of Secondary Schools in Uganda, 1997 to 2001*

Year	Number of Secondary Schools
1997	621
1998	837
1999	1633
2000	1892
2001	2400

*Note.* From *Education Profile*; Uganda Ministry of Education and Sports, 2004, p. 6.

*Private Secondary Schools in Uganda*

Formal education was introduced in Uganda in the late 1800s via missionaries and private schools. Following Uganda's independence in 1962, private schools, generally

run by churches, were required to shut down or abandon all affiliation with religious organizations, most of which had required church membership of their students (Ssekamwa, 1997). Those private schools that did survive were forced to rely exclusively on private funding sources such as parental funding, catering primarily to the wealthy. Although some government requirements and restrictions are present, private schools generally have had more flexibility in decision making, curriculum, and services offered. Those families who can afford to do so often send their children to elite private schools (Deininger, 2003; Matovu & Matovu, 2005).

The rapid increase in primary school enrollments in Uganda has greatly increased the demand for secondary education (Stoker, 2005). Lacking adequate public funds to meet the growing demand of those students completing primary school, government leaders took action to decentralize education and to encourage private investment in schools. Indeed, privatization of goods and services was encouraged throughout the economy to bolster growth (Datta-Mitra, 2001).

In developing countries, it is common to find more private schools at the secondary level than at the primary level (Holsinger & Cowell, 2000). In Uganda, while the large majority of primary schools, 81% of 13,407, remain in the public domain (government-aided), the majority of secondary schools are private (UBOS, 2005; Uganda Bureau of Statistics, 2005). According to the Uganda Bureau of Statistics, the composition of secondary schools 2001 to 2004 was as follows in Table 2.3.

Combining private and community schools to form a non-government aided grouping, we see that this group represents 61% of secondary schools in Uganda for the year 2004. Government-aided schools make up only 39% of secondary schools. Thus, it

Table 2.3

*Composition of Secondary Schools in Uganda, 2001 to 2004*

Type of School	Number of Schools			
	2001	2002	2003	2004
Government-aided	601	Not available	718	764
Private	1140	Not available	885	1175
Community	109	Not available	487	30
Total	1809	Not available	2055*	1969

*Note.* From *Education Statistics*; Uganda Bureau of Statistics, 2005, p. 1.

\*The mathematically correct total for the 2003 column is 2090.

is clear that unlike primary schools, the majority of secondary schools in Uganda are not government-aided, but are privately funded and privately run.

*Incongruity in Statistics*

Of note is the difficulty that researchers encounter in LDCs in obtaining reliable, consistent, verifiable statistics and data, even though they may be obtained from official sources. Three matters in the above two tables illustrate this dilemma. First, in Table 2.3, the 2003 total is not mathematically correct. Second, the community school line in Table 2.3 shows great inconsistency over time, particularly with respect to the 2003 figure (unreasonable increase for one year only). Looking one line above to private schools for that same year, we also see a great inconsistency (an unexplainable one year decrease). It would appear that there was some confusion in classification of schools between private and community for 2003. Third, consider the differences in statistics for

2001 in the two tables shown above (Table 2.2 and Table 2.3). Data in Table 2.2 shows that the Uganda Ministry of Education and Sports (UMOES) reported a total of 2,400 secondary schools in Uganda in the year 2001. Table 2.3, based on more finely delineated statistics provided by the Uganda Bureau of Statistics (UBOS), shows a total of 1,850 secondary schools in Uganda in the year 2001. The difference in these two “official” figures, or 550 schools, represents a huge variation; the UMOES figure is 30% higher than the UBOS figure. However, each source internally shows an upward trend in the number of secondary schools in Uganda, a condition relevant to the purposes of this paper.

Many possible explanations could be provided for the differences in figures between these reporting entities of the Uganda government, but that is beyond the scope of this paper. Other limitations and challenges in conducting research in LDCs are addressed in Chapter 3, under the heading Limitations.

#### *Schools as Businesses in Uganda*

In an environment of rapidly expanding post-primary education, financial stability must be addressed, as emphasized by Aoki, et al. (2003):

Progress in expanding enrollment in primary education quickly creates pressure for the expansion of secondary school and tertiary education, and it is important to put in place a policy framework for expanding these levels that ensures quality, relevance, equity, and *financial sustainability* [italics added]. ( 19.2.1)

Financial stability, a concept inherent in successful business, is viewed somewhat differently in most educational circles. There has been a long-standing, worldwide debate about the intersection of schools and businesses. The business world has strongly

advocated that its practices be adapted by schools. Schools have resisted any comparison (Hartzell, 2003). Business seeks to maximize outputs in comparison to inputs. Educators contend that output is difficult to measure and often cannot be quantified (Darling-Hammond, 2004). Educators further argue that the focus of business is profit and that the focus of education is to serve the public good (D. Tanner, 2000).

In the early part of the last century, employers demanded that schools provide them with workers better equipped to work in a factory setting. The industrialization of business led to the industrialization of schools (Cuban, 2004). In much of the world, the factory school model grew as society demanded publicly-funded mass education (Martin, 1994). In the latter part of the 20<sup>th</sup> century, the business concepts of efficiency and accountability were promoted for schools as more and more school boards were composed of business types, more law makers came from business, and the public demanded that their tax dollars be better utilized (Barkley Jr., 1991).

Since that time, there has been a gradual acceptance of some business management concepts being applied to educational settings (Huitt, 2004; Jost, 1991). However, it is rare that schools are actually viewed *as* businesses (Shipps, 2000). Little has been written on this topic (Karmokolias & Maas, 2003) and what has been written generally addresses it only in piecemeal fashion, one subtopic or issue at a time (Gray, 2004; Greene, 2002; J. A. Langer, 2004). Indeed, mass public educational systems and practices may bear little resemblance to those common in the business sector (Cuban, 2004). However, as will be shown below, there are circumstances where schools, particularly private schools, do and should look very much like businesses.



This research project assumes the perspective of schools *as* businesses rather than schools *for* business, business for schools, or business schools. Specifically, it explores the similarities between private secondary schools in Uganda and business systems and structures in general. Those similarities identified, this author could rationally explore the use of business practices as related to long-term financial viability of private secondary schools.

Private secondary schools in Uganda are entrepreneurial in nature. They generally have been established as for-profit organizations. Although they must operate within some governmental guidelines, their structures are very similar to small, start-up businesses.

The following is a non-exhaustive list of readily identifiable similarities between private secondary schools in Uganda and typical entrepreneurial businesses.

1. Private secondary schools are created by entrepreneurs (sometimes educators, but often not) to meet a demand for services (J. J. Tanner, 2002; Tooley, 2003).
2. Private secondary schools charge fees for services provided. These fees are set in much the same way as prices in any service industry; they are a function of market influences such as supply, demand, and perceived quality of the product (Bray, 1996; Deininger, 2003).
3. Private secondary schools are on their own to procure materials, supplies, teachers, and other critical resources. The marketplace in which these critical resources are to be found may be highly competitive (Mugimu, 2004).

4. Private secondary schools must satisfy their customers or face losing their clientele (C. B. Mugimu, personal communication, November 26, 2002, January 27, 2005, and March 24, 2006; Mugimu, 2004).
5. Competition for customers/clientele/students is a reality, and private secondary schools must work at building their reputations to attract the “best” students (C. B. Mugimu, personal communication, November 26, 2002, and March 24, 2006; J. Tooley, P. Dixon, & J. Stanfield, 2003).
6. Private secondary schools look for ways to differentiate their “product” (C. B. Mugimu, personal communication, December 5, 2004).
7. Private secondary schools do not have a governmentally guaranteed revenue stream or flow of other resources (D. B. Holsinger, W. J. Jacob, & C. B. Mugimu, 2002b).
8. Risks are assumed by private secondary school owners (C. B. Mugimu, personal communication, June 22, 2006; J. J. Tanner, 2002).
9. Private secondary schools are capital intensive and capital expansions require financing via owner investments, loans or retained earnings (V. Marsh, 2005).
10. Returns (profits) may be distributed to owners or retained for use by the school (reinvestment of funds into capital structures, financing expansions, etc.), just like any other business (C. B. Mugimu, personal communication, March 24, 2006).
11. Efficiency and cost savings are critical to profitability (Bray, 1996; Holsinger et al., 2002b; J. Tooley, P. Dixon, & L. Stanfield, 2003).

12. Owners must think in terms of long-term survival of their organization as well as short-term profitability (C. B. Mugimu, personal communication,, March 24, 2006).
13. Finally, these private schools are required to file *revenue reports* (essentially tax returns) with the Uganda Revenue Authority (Uganda’s taxation arm), the same as every other business. By contrast, government schools, as “educational institutions of a public character” are specifically excluded from this requirement, qualifying as “exempt organizations” (Bahemuka, 2004, p. 61, "The income tax act cap. 340", 1997).

Thus, this author presents the case that private secondary schools in Uganda are essentially businesses—being established, run, and taxed as businesses.

In essence, private secondary schools in Uganda may be seen as *social entrepreneurs*. Social entrepreneurialism (a term used with increasing frequency in the world of NGOs, relatively new to the business world, but rarely seen yet in educational realms) refers to organizations with a *double bottom line* (Bornsein, 2004; The Institute for Social Entrepreneurs, 2002). These are organizations dually driven, with one eye towards societal good and the other towards sustained profitability. They have a “do well; do good” orientation (Wilson, 2006). The application of effective business assessment tools to these schools may be of great benefit in achieving the “do well” goal, just as they have proven beneficial to businesses in general.

#### Financial Assessment in Education

*Financial Assessment in Education* is an amalgamated title rarely seen in educational literature. Deconstruction and discussion of the component parts of this title

will be beneficial to understanding the underlying issues. Hence, the following discussion features four topic areas: (a) financial assessment in settings other than education, (b) finances in education, (c) assessment in education, and finally, (d) financial assessment in education.

### *Financial Assessment in Settings Other than Education*

The term *financial assessment* quite literally refers to investigating certain key financial figures or relationships for a particular individual, entity, or group of entities (Kapp, 2005; Merrill Lynch & Third Age, 1997). Financial assessment may also be referred to as *financial analysis* (Helfert, 1997; White et al., 1998). To avoid confusion, the author notes that this term, financial assessment, is also a term widely used in governmental settings where it has a very different meaning and specific application (Cambridgeshire County Council, 2006; Office of Government Commerce, 2002). The governmental use of the term is not the meaning referred to in this study.

The figures or relationships investigated through financial assessment may be industry specific (Ahang, 2005; Björkdahl, Bohlin, & Lindmark, 2004; Ketz et al., 1990; Mangiero, 2004). Whether applied to individuals, profit-oriented businesses, non-profit organizations, associations, trusts, foundations or governmental entities, they all are used to provide important information regarding financial health of the entity (Fernández, 2003; MGT of America, 2005; Powell, 1996; Quick & Kahn, 2002). Users may be internal (owners, managers, or those with fiduciary responsibilities) or external (regulatory agencies, trade organizations, etc.) (Bank Proposal, 2005; Tamari, 1978).

In the world of business, financial considerations are of primary importance (Kapp, 2005; Mandell, Cowen, & Miller, 1981). Simply put, if an organization cannot

maintain its financial health, it will likely fall into the disastrous state of *business failure* (L. C. Gupta, 1983). Studies have shown that financial problems are the leading cause of business failures (Katz & Cabezuelo, 2004). Given the disappointing statistics of business failure rates worldwide, it is imperative that any organization pay attention to its financial health and look for *warning signs* that may signal potential areas of distress (Farney, 1995).

In business settings, it is common to look for a model of financial health within the industry of operation (Ketz et al., 1990; Mandell et al., 1981). These models are compilations of statistics from actual companies within each given industry (Dun & Bradstreet, 2003; RMA, 2002-2003). Wise business managers look inwardly at key financial relationships based on figures provided by a reliable accounting system. These then can be compared with industry averages to monitor the individual organization's health. Appropriate corrective action may be taken before it is too late (A. Lev, 1969).

As will be discussed in more depth later in this chapter under the heading *Business Analysis as a Tool in Assessing Organizational Financial Health*, specific analysis tools have been created to inform financial users about such important issues as solvency, cash flow, debt structure, and inventory management, all of which play into the organization's prospects for sustained operations, or long-term viability (Thompson, 2005; Viscione, 1983).

#### *Finances in Education*

Literature that addresses school funding generally assumes government-funded schooling (Haselow & Josna, 1995). Many countries of the world have mandatory, government-funded schooling. Indeed, government funding is often seen as an ideal.

However, public schooling is not necessarily the norm in all countries. For example, in the Netherlands, 70% of students attend private primary schools (Kober, 1999). In LDCs it is not unusual to see public funding of education narrow at upper educational levels, leaving secondary and tertiary education more and more to the private market (Liang, 2002; UNESCO, 2000b).

Generally speaking, the distinction of public versus private school refers to the funding source and attendant regulation authority—the governing body with power to decide the direction, the curriculum, etc. This funding designation is also present in so-called government or non-government schools (Kober, 1999).

With public/government funding comes a demand for public accountability. In some countries, government funding is so extensive that specific accounting guidelines have been set with corresponding reporting requirements (Brimley & Garfield, 2005; NCES, 2003). These accounting reports are generally filed with appropriate government agencies and are open to public inspection. Researchers will note that this public accessibility generally makes for greater ease in obtaining data for analysis.

Private or non-governmental schools, with little or no government funding, are left to locate their own alternative sources of funding. Traditionally, this funding has come from such sources as grants from charitable or religious institutions, tuition and fees charged to students, community fundraising activities, etc. (Bentaouet Kattan & Burnett, 2004; Tsang, 2002). Reporting requirements for private educational institutions vary with country and circumstance. Generally speaking, financial reports for private institutions are rather inaccessible. If not publicly funded, the institution may not be

required to produce publicly accessible financial statements. This greatly limits the ability of an outside researcher to access data for analysis.

Over the few most recent decades, analysis of financial matters related to education has primarily focused on the attempt to determine an optimal level of funding (Brimley & Garfield, 2005; Hanushek, 1986, 1996). Financial inputs are compared to quality of educational outputs (primarily student attainment) (Anderson, 2002; Burtless, 1996; Crampton, 2006; Haselow & Josna, 1995; Knoepfel & Verstegen, 2006; Kozol, 1991). Analysis examining the efficiency of resource usage has generally been applied to public education in the form of *production function* analysis (Hadderman, 1998; Knoepfel & Verstegen, 2006; Levin, 1993). Although the research, findings, and interpretations of educational production function have been widely published and hotly debated, it is important to point out that this type of analysis is useful primarily for its education policy implications (Greenwald et al., 1996; Hanushek, 1997; Pritchett & Filmer, 1999). Beyond the public policy arena, production function analysis provides little assistance in the cause of helping individual schools to improve their financial well-being. These schools need tools that offer them the opportunity for introspection and analysis of their own individual financial circumstances, such that they can assess and take appropriate actions to improve their fiscal viability.

Business concepts, such as accountability and efficiency, have made their way into the educational realm (Baughan, 2002; Graham, Lyman, & Trow, 1995; Huitt, 2004; Lockheed & Hanushek, 1988; McEwan & Carnoy, 2000), and accounting practices have been developed in some countries for the financial reporting of governments and educational units (Brimley & Garfield, 2005; Governmental Accounting Standards

Board, 2006; Montesinos & Vela, 2002; National Center for Education Statistics, 2003).

Although it may seem logical that the education world would fully embrace business concepts and practices, that has not been the case (Hartzell, 2003; Shipps, 2000).

One area where there appears to be a void in the use of business practices in schools is that of assessment of financial health or financial well-being of individual educational institutions. As will be discussed in more detail in the next section, assessment in education tends to focus on student outputs or learning outcomes, rather than on institutional financial concerns (Drum, 2001; Greene, 2002). There are several possible explanations for the lack of attention and application of business practices to the educational environment.

1. Education in much of the world is dominated by government rather than private enterprise (Belfield, 2000; Kozol, 1991; Lewin & Caillods, 2001a).
2. Schools are generally not perceived as businesses by the education community (Hartzell, 2003).
3. Schools established and run as businesses are generally left to their own devices for financial survival; there is no known international association of private schools which offers financial support and advice.
4. In consideration of tenure and review, academics generally look to publish their research in “A level” journals which tend to concentrate on theory rather than practical measures. Therefore, research for pragmatic purposes may not be given very high priority.

In addition, it is possible that relatively few academics have a background or interest in the practical matters of running a business and keeping it going.



*Assessment in Education*

Within the field of education, assessment has become “extraordinarily widespread” (Banta, 1999). Driven, in part, by publicly demanded accountability (Darling-Hammond, 2004; Huitt, 2004), assessment may take a number of directions and forms. Even though they are difficult to define, student learning outcomes are a common target for assessment (Bers, 2001). The Education for All movement has acknowledged the need for assessment of student learning, and not just as a matter of caring that students are actually learning. Evidence shows that some aid-granting institutions have begun to link aid to achievement of learning targets (Goldstein, 2004).

Assessment in education is often associated with perceptions of quality of education. Student testing may not be the ideal method to determine quality of education nor individual student knowledge, abilities and desirable skills. However, it is the most widespread and commonly accepted assessment tool (Glaser & Silver, 1994; UNESCO, 2004a).

National examinations may be used in a number of ways. As an approximation of quality of education offered by a particular institution, test scores may be tied to funding (Ullrich, 2006). Test scores may be published, allowing students and their families an avenue to assess the quality of a particular educational institution (C. B. Mugimu, personal communication, November 26, 2002). Underscoring its widely accepted usage, testing is seen by UNESCO’s EFA Monitoring Team as a way to evaluate how well students have learned at particular junctions, especially at points where they may exit the school system. Test results are used to examine the relationships between education quality and economic growth (UNESCO, 2004a).

National examinations in Uganda are ubiquitous and are administered at all levels of education. Although the use of national examinations as a proxy for quality is highly contested in other regions of the world, this is the commonly accepted and recognized assessment tool in the Ugandan education system (J. M. Hite, S. J. Hite, B. C. Mugimu, W. J. Rew, & Y. Nsubuga, 2004a).

The Ministry of Education and Sports (MOES) administers national exams through the Uganda National Exam Board (UNEBC). The Ugandan national exam is given at specific points in a child's academic career: Primary 7, Secondary 4, and Secondary 6. Exams are administered in November of each year at schools that qualify as examination centers. The examinations may be from two days (for primary school) to four weeks in duration. Results of the exams are made public in January or February of the next year. The school year is run on a calendar year basis, from January to December (J. M. Hite, Hite, Jacob, & Tanner, 2002).

UNEBC examinations are administered only at schools that meet specific criteria and are designated as UNEBC schools. Students enrolled in non-UNEBC schools must make arrangements to be examined at a UNEBC school. Examination scores are reported by UNEBC site, not the student's school of enrollment, although in the majority of cases these are the same (Naluwemba, 2002).

The following observations, made by Ugandan secondary school owners or head masters, underscore the extreme emphasis placed on national examination scores as indicators of quality of education.

1. Mr. Duncan, headmaster of Greenville Secondary School: “Now, the system is backed by only one factor, the examination. We are usually gauged by that” (J. M. Hite et al., 2002).
2. Namiryango Senior Secondary School: “...our education system is, anyway, mostly focusing on passing in exams” (J. M. Hite et al., 2002).
3. Dr. Christopher Mugimu, owner of Mukono Town Academy: “The national exam plays a central role in the Ugandan educational system. It drives everything” (C. B. Mugimu, personal communication, November 26, 2002).

National examinations are the normative recognized measure of effectiveness or quality of education in Uganda. These examinations are accepted as valid instruments for quality measurement. A host of issues could be raised as to the “rightness” of this measure, “teaching to the test,” or other testing-related issues, but such discussion is beyond the purpose and scope of this research.

#### *Considerations for Financial Assessment in Education*

Financial assessment in education has generally focused on public, governmentally funded education (Carvlin, 2003; Kapp, 2005). There are four possible explanations for this.

1. Public demand for accountability. When public funds are used for education, the public generally wants to know how those funds are used. On the heels of the accountability movement, governmental institutions have been drivers of financial assessment in education, spurred by public inquiry (Alexander, 2001; Huitt, 2004; O'Day, 2002).

2. Data accessibility. Financial information for public institutions is publicly accessible, making the analyst's job much easier (Koski & Weis, 2004; Laine & Hinrichs, 1995).
3. Special training and skills needed for assessment. Financial assessment may require the services of specially trained professionals. This author suggests that it is more likely that a government with many smaller units to assess would have access to such assessment expertise than would an individual educational institution.
4. Cost of analysis. Closely tied to the need for special skills for financial reporting assessment is the need for funding to pay for that expertise. Governments are more likely to build this into their budgets than are private institutions. Large international organizations that have an interest in public education, such as the UN, UNESCO or World Bank, often conduct their own assessments relative to public education (UNESCO, 2003).

Whereas financial assessment in education has primarily had a public, governmental funding emphasis, much of the post-primary education in developing countries is provided through private schools (Holsinger & Cowell, 2000). Private or non-governmental schools, unable to access public funding, or having limited government funding, are left to look for other sources of funding. Traditionally, this funding has come from such sources as grants from charitable or religious institutions, tuition and fees charges, community fund raising activities, etc. (Tsang, 2002). The non-public, non-governmental funding nature of these institutions contributes to the relative absence of published financial assessments relative to these private schools.

Reporting requirements for private educational institutions vary with country and circumstance (Kober, 1999; McEwen, 1995; Nesdale, 2002). Generally speaking, financial reports for private institutions are rather inaccessible. An institution, if not publicly funded, may not be required to produce publicly accessible financial statements. This greatly limits the ability of an outside researcher to access data for analysis.

Private secondary schools in developing nations meet a demand for continued education and serve important societal needs (Holsinger & Cowell, 2000; Lewin & Caillods, 2001a). It is in the best interest of all stakeholders—society at large, local communities, parents, students, teachers, administrators and managers, owners, etc.—that all schools, whether public or private be efficiently run and financially stable. School failure affects all stakeholders; investments are lost, expectations go unmet, jobs vanish, learning is lessened, and a ripple effect is felt throughout the community.

One means of protecting the viability of a school is to carefully assess its financial practices and status. Where there are no known industry standards for comparative purposes, models of financial stability can be built. To do so entails careful analysis of available data utilizing widely accepted financial analysis methods and tools (Chabotar, 1986).

### Business Analysis as a Tool in Assessing Organizational Financial Health

Assessment of organizational health may include analysis of such factors as organizational structure, organizational culture, economic conditions, product quality management, policies and strategies, management style, and legal environment, as well as business practices. Each of these factors may affect the health and viability of the

organization (Chabotar, 1986). While a need exists for thorough and pervasive analysis of all organizational considerations, this research project concentrates only on business analysis as a tool to assess the financial health of privately-operated educational organizations in Uganda.

### *Business Analysis*

The term *business analysis* generally refers to the study of various factors which may affect the viability and profitability of an organization (HCA, 2002). In a broad sense, business analysis may address any elements which are critical to the short- and long-term success of a business (Bernstein & Wild, 2000; biz/ed, 2005; Meyer & Zucker, 1989). The following list includes common factors to be considered in a comprehensive business analysis (Ebert & Griffin, 2003; Mandell et al., 1981; U.S. Small Business Administration).

1. Purpose, mission, vision, and philosophy of the organization
2. Product or service
3. Factors unique to industry and location
4. Market factors such as supply, demand, product differentiation, and competition
5. Leadership and management; risk and risk management; resource management
6. Technological needs and capabilities; information systems
7. Legal environment
8. Ownership
9. Finances, financial reporting, and financial assessment

Many factors contribute to the success of an organization. Few would argue that whether the organization is a governmental unit, a non-profit organization or a business, finances do not matter. It appears that since the beginning of human writing, there have been attempts to quantify and describe economic and financial transactions (Brown, 2004; Girous, 1999; Woodrow Wilson Institute, 1924).

Numerous tools exist to address each of the above-listed factors (Dun & Bradstreet, 2002; Hornung & Associates; Rueters, 2004). Most of these factors could be addressed in an overall business analysis of private schools. However, the project at hand will focus only on the last of these items: finances, financial reporting, and financial assessment.

### *Financial Statements*

In today's world, most successful organizations have some formalized system for recording and summarizing financial data. Financial statements are prepared at the end of each fiscal period to provide information to stakeholders or regulatory entities (Maurer, Shulman, Ruwe, & Becherer, 1995).

In theory, and in good practice, these financial statements are prepared according to generally accepted accounting principles (GAAP). GAAP are usually determined nationally by an independent accounting standards board representing the accounting profession (Maurer et al., 1995). GAAP set by the US and the UK are most recognized worldwide and have influenced accounting practices in many other countries. In addition, International Accounting Standards (IAS) have been formulated (Roberts, Weetman, & Gordon, 1998). Their use may be adapted by large corporations that deal

with international investments or cross-border security investments (Securities and Exchange Commission, n.d.).

The benefits of preparing financial statements according to GAAP include consistency, comparability, understandability, reliability, objectivity, and disclosure (Revsine, Collins, & Johnson, 2002; Roberts et al., 1998). Statements may be used for internal purposes (management information and decision making) or they may be prepared for external use (lending institutions, regulatory agencies, etc.) (Maurer et al., 1995). Many organizations are required to file financial statements with governmental agencies. Governments, however, may set their own reporting standards which may be at variance with GAAP. As a case in point, in the US, large publicly-held corporations prepare their primary financial statements according to GAAP (Fridson, 1996) set by the Financial Accounting Standards Board (Maurer et al., 1995). These statements are generally subjected to an external audit and may be widely circulated (White et al., 1998). They form the basis for external evaluations such as those performed by bond rating companies, financial analysts, stock brokerage firms, individual investors, lenders, etc. However, these financial statements are not to be confused with tax returns required by the IRS, which are based on the United States Tax Code, subject to laws passed by the US Congress (United States Department of the Treasury).

A full set of formal financial statements usually consists of three prescribed financial statements, followed by a set of explanations and other relevant information, much like footnotes. A brief description of each follows:

1. *Balance Sheet* (or it may be called a Position Statement). This statement lists assets, liabilities, and equity accounts as of the close of operations on the last day



of the fiscal period. The balance sheet is like a snapshot of the “real” or non-periodic accounts of the organization at a specific point in time (Hatfield, 1920; Hey-Cunningham, 2000; Jiambalvo, 2004).

2. *Income Statement* (or it may be called a Profit and Loss Statement). This statement, if prepared on an accrual basis of accounting, according to GAAP, reflects the revenues earned during the fiscal period less expenditure incurred in order to generate the revenues recognized (Albrecht, Stice, Stice, & Swain, 2005). The difference between revenues and expenditures is recognized as profit or loss, commonly referred to as “the bottom line” for business purposes.
3. *Statement of Cash Flows*. This statement shows (a) cash inflows by source such as from operations, from loans, from stock sales or sale of capital assets, etc., and (b) cash outflows by source such as operational expenditures, capital asset acquisitions, loan repayments, etc. (Albrecht et al., 2005).
4. *Notes to the Financial Statements*. Items or events of significance that may affect the organization’s financial status, but are not shown in the above financial statements are disclosed in this narrative section. The Notes are considered an integral part of the financial statements (Downes & Goodman, 2003). Examples of situations that may be disclosed here are *subsequent events*, such as a factory lost to fire one week after the close of the fiscal period, or major legal proceedings, or contracts not reflected in the financial statements themselves.

The first three of these above statements are quantitative in nature. The Notes to the Financial Statements bring in qualitative information that should be considered in analyzing financial statements. Business leaders have long recognized that both

quantitative and qualitative factors must be addressed in order to make good decisions based on financial statement information (Garrison, Noreen, & Brewer, 2006; Saliers & Holmes, 1937; White et al., 1998).

In large organizations, formal financial statements are prepared by an internal accounting staff. Financial statements may be subjected to an external audit. These auditors perform an *attestation* function, performing sampling and testing in order to render an *opinion* on the financial statements. This opinion states whether or not the financial statements as a whole do indeed portray a fair and accurate picture of the organization's financial position, based on the auditor's tests, as of the close of the specified fiscal period (Arens, Elder, & Beasley, 2005; Ricchiute, 2005).

Fiscal periods covered by audited financial statements are generally 12 months in length and are consistent over time, the same fiscal year period being used year after year (Thomsett, 1991). The organization's fiscal year may begin at any point deemed most beneficial to management, unless specifically set by some government or regulatory agency. The fiscal year end may be set at the lowest period of activity in the calendar year. As examples, many retail businesses set fiscal years ending January 31 when inventory levels are lowest following peak holiday and sales periods; many colleges and universities in the U.S. logically use June 30 as a fiscal year end.

### *Financial Statement Analysis*

As used above, the term *business analysis* generally refers to the study of various factors which may affect the viability and profitability of an organization. It may consider qualitative as well as quantitative factors. Strictly speaking, *financial statement analysis*, a subset of business analysis, is quantitative in nature, and concentrates on data

contained in the financial statements of an organization and relationships between those figures (*Finance for managers*, 2002). This analysis should be informed, however, by critical qualitative information such as that contained in the Notes to the Financial Statements (Albrecht et al., 2005; Niskanen, 2005).

By themselves, financial statements may not be extremely useful in assessing an individual organization's financial health. However, utilizing specific analysis tools to examine the information contained in an organization's financial statements may provide valuable insight as to the organization's financial well-being. Absolute numbers on financial statements, expressed in monetary units, in and of themselves mean little. Only in comparison to other contextual data and information can they be understood. Financial statement analysis relies on comparisons—over time, between organizations within the same industry, and among financial statement line items at the same point in time (Ketz et al., 1990).

Financial statement analysis may be performed in a variety of ways. Five of the most common analyses are discussed below:

1. *Horizontal (longitudinal or trend or time series) analysis.* Select financial figures for the same company are examined over several periods of time. This allows the analyst to identify trends or question substantial differences in key relationships of a specific organization between fiscal periods (BookRags; Garrison & Noreen, 2003; Garrison et al., 2006; Revsine et al., 2002; Steffy, Zearley, & Strunk, 1974).
2. *Vertical analysis.* A single period's financial statements are analyzed by expressing each figure as a percentage of a total for that particular statement.

Line items on the Income Statement are expressed as a percentage of revenues. Line items on the Balance Sheet are expressed as a percentage of total assets. The numbers are presented vertically on financial statements, thus the term, vertical analysis (BookRags; Garrison et al., 2006; Lanza, 2004).

3. *Common size statements.* Once each figure is expressed as a percentage in vertical analysis, entire statements may be presented as percentages, allowing for comparisons between organizations of dissimilar size (Schaeffer, 2002). However, greater validity attaches to comparisons between organizations with the greatest similarities. Comparisons between organizations may be appropriately made only within the same *industry* (Miller & Miller, 1991). Even factors such as geographic location may render comparison between common size statements less valid. Common size statements may also be prepared for longitudinal study, eliminating the effect of growth in size of the same company and allowing the analyst to concentrate on relationships as percentages rather than monetary units (Revsine et al., 2002).
4. *Ratio analysis.* In this type of analysis, mathematical relationships expressed as ratios are explored and interpreted (Viscione, 1983). Specific monetary figures are compared with other monetary figures on the same financial statement or on another financial statement for a specific purpose. Liquidity, solvency, and profitability are among the many concerns that may be addressed through the use of ratio analysis (BookRags; Garrison et al., 2006; Revsine et al., 2002).

5. *Cross-sectional analysis.* Ratios of two or more organizations in the same industry may be compared, or ratios of a specific organization may be compared to industry average ratios (Revsine et al., 2002; VentureLine, 2005a).

Financial statements are commonly analyzed both internally and externally. Comparisons often are made to *industry standards*. A number of organizations secure and analyze financial statements from literally millions of companies and prepare and publish *industry norms* (Dun & Bradstreet, 1992, 2003; RMA, 2003-2004). Industry norms may also be called industry guides, industry standards, industry averages, or industry benchmarks. Industry norms do not identify what is “best,” but rather, what is common or average within an industry. Some services provide ranges of responses, identifying upper and lower quartiles and midpoints within (Dun & Bradstreet, 2003).

These industry norms are used in a variety of ways. Benchmark comparisons measure an organization’s financial health, historic, and current performance against a predetermined standard (Revsine et al., 2002). Investors may compare a specific company to appropriate industry averages in order to assess financial health and the potential for future performance (Ketz et al., 1990; Troy, 2004). Lenders may compare an individual organization’s financial statements and *key ratios* with industry averages as part of their assessment of risk in lending to that organization (Huff, Robert M. Harper, & Eikner, 2000). Substantial deviations from the norms serve as red flags for further investigation (VentureLine, 2005a). Individual companies may compare their own financial statements to industry benchmarks as an assessment of financial well-being. In

this process, irregularities may be identified which, when properly addressed, can lead to corrective action (Jones, Werner, Terrell, & Terrell, 2000).

Financial statement analysis is widely accepted and frequently applied to businesses of all types. Indeed, virtually every college business student is required to take courses which offer exposure to this topic. Accounting textbooks have been around for over 500 years (Sadler, 1894; L. M. Smith, 2002). During that period of time, accounting practice has evolved from simple debits and credits, to financial statement preparation, to the recognition for the need and establishment of GAAP, to computerized accounting information systems (Mathews & Perera, 1996). In recent years, many textbooks approach accounting and financial statements from an analysis perspective (Bergevin, 2002; Bernstein & Wild, 2000; Stice, Stice, & Diamond, 2003; Warren, Fess, & Reeve, 2005). The emphasis has moved from how to properly classify and record financial transactions (Sadler, 1894) to how to best utilize information provided by accounting systems (Revsine et al., 2002).

Financial statement analysis is time-tested and widely used (Lanza, 2004). A quick search on the internet will reveal the breadth of financial statement analysis usage. Literally millions of results offer articles and guides, from first-time user level to advanced competencies. Services are offered to provide financial statement analysis for those who wish to learn more or for those who do not wish to tackle it themselves (American Express, 2005; NECF; New England College of Finance; VentureLine, 2005b; ZeroMillion.com, 2005). Key financial ratios and their use are carefully explained (Dun & Bradstreet, 2001; va-interactive.com).

Financial statement analysis is generally seen as an application-oriented rather than theory-oriented type of analysis. Hence, fewer scholarly articles have been written on this topic. Those few that exist generally examine the empirical bases for financial ratio analysis through the lens of *pragmatical empiricism* (Horrigan, 1968; Salmi & Martikainen, 1994). Such discussion may be of interest, but is not pertinent to the purposes of this research project.

### *Financial Statement Ratio Analysis*

The most commonly used and widely understood of the financial statement analyses described above is that of ratio analysis (Beaver, 1966; Garrison et al., 2006). As noted earlier, ratios are created when specific figures are compared for a specific purpose with other figures on the same financial statement or on another financial statement.

Financial statement ratios are used by investors, creditors, lenders, managers, owners (Fridson, 1996; Steffy et al., 1974), and even auditors (Lanza, 2004) to better understand the financial condition of an organization. Ratio analysis may be performed for intra-company comparisons—looking at two or more years of financial statements for the same company, or for inter-company comparisons—comparing companies within the same industry (Weygandt, Kieso, & Kimmel, 1999).

Although the notion of ratios hails back to at least 300 BC in Euclid’s writings, the practice of using ratios in the study of financial statements began in the last half of the 1800s. In the early 20<sup>th</sup> century there was considerable excitement over the possibility of finding a “perfect” ratio to predict financial well-being or impending financial doom

(Horrigan, 1968). Eventually many ratios emerged for use in financial statement analysis (Gates, 1993).

Today, it is common to find discussions of financial ratios grouped according to the purpose or area of concern addressed by the specific ratios (B. Lev, 1974; Palepu, Bernard, & Healy, 1996; Revsine et al., 2002; Roehl-Anderson & Bragg, 2005; Tyran, 1986; White et al., 1998). These actual groupings and their component ratios may vary somewhat over time and from author to author, given their particular orientation and writing purpose. [For examples of this, see the evolution and variances in presentation among Horrigan (1965), Lev (1974), Tyran (1986), Gates (1993), and Garrison (2006).] Manufacturing firms with their various inventories and productive facilities have the greatest number of ratios available for analysis. Service-oriented organizations (including schools) which rely primarily on the sale of services rather than the sale of goods, have fewer elements of concern. Therefore, fewer financial ratios are available for analysis purposes for service organizations.

The following groupings and their specific ratios are typical for financial statement analyses of business organizations. Those ratios that pertain only to manufacturing or merchandising entities (which generally have inventories as a large component of their assets, the sale of which constitutes their main source of operating revenue) are outside the scope of this study and will not be discussed herein. This research project is geared towards financial analysis of schools; therefore, it will focus on those financial ratios most appropriate for analysis of service-oriented businesses.



1. *Profitability ratios.* This group of ratios focuses on those components that affect the organization's income or success in operations for a given period of time (Roehl-Anderson & Bragg, 2005; Weygandt et al., 1999).
2. *Efficiency ratios.* These ratios show how efficiently assets and equity are being utilized. These are also commonly referred to as "turnover" ratios , activity ratios (Maurer et al., 1995; White et al., 1998), or operating or operations ratios (Albrecht et al., 2005; Stice, Stice, & Skousen, 2004; Viscione, 1983).
3. *Liquidity ratios.* These ratios focus on the organization's ability to meet its short-term obligations which may include short-term formal debt such as a note payable, credit obligations that may arise from daily operations, or any debt that will mature within the next operating cycle (Gates, 1993).
4. *Solvency ratios.* This group of ratios focuses on the organization's ability to meet its long-term debt obligations. This relates to the company's long-term survivability (Weygandt et al., 1999).
5. *Leverage ratios.* This group of ratios examines the organization's debt structure. It addresses the use of debt to leverage its productive assets (Albrecht et al., 2005).
6. *Cash flow ratios.* This group of ratios highlights the necessity of efficient cash management (Schaeffer, 2002). Relatively recent in its development and use, it is subdivided into sufficiency ratios (addressing the cash flow needs of the entity) and efficiency ratios (measurements of how cash is generated) (Roehl-Anderson & Bragg, 2005).

7. *Other indicators.* In a catch-all category, some financial statement users suggest that there are other ratios that may be helpful in financial analysis (Fridson, 1996; Stice et al., 2004).

Specific ratios, along with explanations of their use, meanings and formulas, will be provided in Appendix D.

#### *Caveats Regarding Analysis Based on Financial Statements*

Financial statement analysis may form the quantitative basis for critical business decisions. Many experts believe that decisions based on financial statement analysis must be informed by other relevant information that may not be addressed by or presented in the financial statements (Garrison et al., 2006; Patrone & duBois, 1981). Financial statement analysts must recognize that there are certain types of information that cannot be captured in financial statements or even in quantitative terms. Such items include, but are not limited to, unique location, organization reputation, customer brand loyalty, key employees, professional associations, management quality, etc. (Albrecht et al., 2005).

In addition, financial statement analysis must be appropriately applied (Tyran, 1986). For comparability purposes, this analysis should only be applied to the same organization over several periods of time (intra-company comparisons), or to similar organizations within the same industry (inter-company comparisons). The most appropriate inter-company comparisons are between organizations of similar size and location within the same industry (M. C. Gupta & Huefner, 1972; Weygandt et al., 1999).

Of further importance, financial statements themselves have limitations. For instance, the balance sheet is based on historical cost information; hence, assets shown at

depreciated historical cost may bear little resemblance to their current market value. Severe or persistent inflation or deflation, or other economic factors may influence market values. If the organization is a corporation with publicly-traded stock, market value may be approximated through calculations dealing with market value of the stock compared to book value of the stock (Stice et al., 2004). However, this type of market value approximation is not available to privately owned companies.

Comparability between entities may also be limited because of classifications or titles used, or because of the accounting practices employed (*Finance for managers*, 2002; Stice et al., 2004). GAAP may allow for several different ways of accounting for a particular situation. Cases in point include GAAP methods of depreciation (straight line, double declining balance, sum-of-the-years'-digits, or units of production) or accounting for uncollectible receivables (direct write-off method or allowance provisions). Each acceptable accounting practice will yield a different monetary amount for the related expense, and will consequently impact the profit line. Furthermore, financial accounting standards may differ from tax accounting requirements imposed by a governmental entity (Maurer et al., 1995).

In addition, an entity may structure a financial transaction so as to have the "best" impact (this could be the complete absence of a financial impact) on its financial statements. "Off balance sheet financing," which may be in the form of leases or joint ventures, may constitute major economic financial commitments that do not require disclosure in the financial statements. The relatively recent Enron scandal in the US underscores this potential difficulty and the commensurate need for looking beyond the face of the financial statements alone (Niskanen, 2005; Stice et al., 2004).

## Financial Assessment of Secondary Schools in Mukono District, Uganda

There is wide-spread use of financial assessment tools within the business community at large (Lanza, 2004; Tyran, 1986). Perceived benefits of their usage include identification of financial weakness that if left unaddressed may lead to permanent failure of the organization (Ooghe & Verbaere, 1985; Tamari, 1978). Financial guidelines, industry averages, and benchmarks exist for most industries. Education, however, is a notable exception (Ketz et al., 1990).

No known study addresses the financial health of private secondary schools in the Mukono District of Uganda. It appears that there is no trade association for these private schools, no source to which these schools may turn for guidance on what constitutes financial health and viability within their industry and location. There is no known standard for comparison.

There is a relative lack of pertinent information upon which to build a model for financial viability in an LDC setting such as Uganda. However, one such data set exists. This data set is based on research conducted in the Mukono District of Uganda in 2003 under the direction of Dr. Julie M. Hite and Dr. Steven J. Hite (J. M. Hite, Hite, Rew, Mugimu, & Nsubuga, 2004).

### *Description of the Mukono District of Uganda*

The Mukono District is the fifth largest in the nation of Uganda with 11,764 square kilometers of land. It is centrally located and lies just east of the capital of Kampala, along the northern shores of Lake Victoria. According to the official Mukono website, population of the district totals 807,923. The district includes both urban and

rural households ("Mukono", 2006). Some parts of the district are accessible only by foot or on motorcycle (Flake, 2003). Of the 1459 kilometers of reported roadways, only 759 are considered "motorable" ("Mukono", 2006).

A 2003 survey identified 74 secondary schools in the Mukono District (J. M. Hite, Hite, Rew et al., 2004). These secondary schools range in size from 50 to 1,310 students. This Hite & Hite database, the most extensive known for all secondary schools in a single district of Uganda, and also the most accessible, was used for this project. The richness of this data set with its emphasis on financial resources offers the opportunity for in-depth exploration and application of business analysis tools to secondary schools in an LDC setting. More extensive information regarding the database and construction of survey instruments is given in Chapter 3.

#### Summary of Literature Review

The EFA movement has focused globally on universal primary education for all. Massive efforts have been made to bring primary education to every world citizen. This emphasis on primary education has created a demand for secondary education. In many nations, including Uganda, government funding has focused on primary education, leaving little funding for secondary education. The resulting short supply of government-funded secondary institutions compared to the demand for secondary schooling has created a bottleneck in the education system. As a result, laws have been passed in Uganda which allow private secondary schools to be organized and run as businesses.

Throughout the world, businesses utilize financial assessment tools and comparisons with industry benchmarks as a means of analyzing and attaining financial health and stability which may, in turn, contribute to the long-term viability and success

of the business. There is a lack of application of business assessment tools to education in general and specifically to the industry of private secondary schools in Uganda.

This research project applied financial assessment tools widely utilized in business to selected private secondary schools in the Mukono District of Uganda. The intent of this project was to construct a model for assessment of financial viability for these schools. Individual schools were compared with this new industry average model. The project also explored the potential relationship between fiscal viability and quality of education.



## CHAPTER 3

### METHODOLOGY

#### Project Summary

This project sought to build a model for assessment of fiscal viability for private schools in the Mukono District of Uganda. Increased government funding for universal primary education has resulted in tremendous increases in primary school enrollments in recent years. Increased numbers of primary school graduates now seek secondary school opportunities. However, there is relatively little government funding for secondary schools. To meet this demand, many private secondary schools have been established. These schools are essentially businesses. This project used business analysis tools to explore the financial health of private secondary schools in the Mukono District of Uganda in order to build a model for assessment of financial viability. Select financial measures were compared to the schools' national examination scores to determine if any relationship exists between fiscal viability and quality of education as measured by examination scores.

Using primarily quantitative methods and methodologies, this project employed Tukey's theoretical framework of an exploratory data analysis approach (Hoaglin et al., 1991, p. 100; Tukey, 1970). In addition, Langer's concept of mindfulness (E. J. Langer, 1989), as Brody and Coulter (2002) apply it to business and accounting settings, informed this analysis. In this mindful exploratory mode, emphasis was placed on pragmatism.

The thrust of this project was to lay the foundation for building a model of financial well-being, or financial viability as it may be termed. Therefore, attention was



also given to model building in financial settings (Cheng & Shimerda, 1981; Nagorniak, 2005; M. Smith, 2003; Tjia, 2004).

### Limitations

Some aspects of the research were not controllable by the author. The following were notable limitations of this project.

1. Throughout the data collection phase of this project it became evident that data collection and reporting systems in Uganda are inconsistent and largely unpredictable. Data for this project may therefore be subject to a less than desirable degree of validity.
2. Research studies generally seek to have a large sample size. However, only 74 secondary schools exist in the Mukono District of Uganda. The relatively small sample size was further limited by UNEB status. Only 59 schools bore this designation. Revenue reports were filed for only 10 schools, restricting the actual database even further.
3. Not all students who sit for a UNEB examination at a testing site are actually students enrolled in that school. While these “non-enrolled” students generally represent a small fraction of the testing population, test results are reported by UNEB testing site and, therefore, may be skewed by the inclusion of students not actually enrolled in classes at the site.
4. The primary survey respondents (headmasters or headmistresses) may not be fully and properly informed nor trained as to all aspects of the school’s financial resources. Hence, their responses may not be entirely accurate or consistent among respondents.

### Delimitations

Some limiting aspects of research must be established by the researcher. This author set the following delimitations on this project.

1. This study was delimited to secondary schools in the Mukono District of Uganda. Preliminary data had been previously collected during the summer of 2002, which identified these schools and allowed the author access to further exploration. The results and conclusions of this study should be viewed as applicable for that district only with perhaps some transferability to similar limited settings, but not global generalizability to settings beyond the population from which the sample was taken (S. J. Hite, 2001).
2. A measure of the quality of education was sought for this project. UNEB test scores are publicly available and offer a reasonable and widely accepted proxy for quality of education provided by schools. Consequently, the author chose this measure as a proxy for quality of education rather than other potential, but less accessible, normative data sources.
3. Revenue reports are filed with the Uganda Revenue Authority (URA) and constitute a relatively readily accessible source document for financial information relative to individual schools. The author delimited financial data sources to that which was obtainable through these 10 official reports, coupled with survey data obtained from the same schools.
4. The survey questions regarding financial resources were worded to achieve the most information with the least amount of offense. Cultural concerns,

those both of the European researchers and the Ugandan participants, may have restricted both the breadth and depth of the questions.

### Data

Data used for analysis in this study came from three separate primary sources: archival survey data, revenue reports, and UNEB test scores. These data sources are individually discussed.

#### *Archival Survey Data*

Archival survey data constituted the initial database for this research project. The following discussion addresses the historical background for the research, development of the survey instruments, pre-testing and administration of the survey, data capture procedures, data entry, and analysis set up.

#### *Background of the Field Research and Survey Instruments*

All survey data from the Mukono District of Uganda which are relevant to this project were collected under the IRB (see Appendix B-2), field work, and coordination of BYU professors Dr. Steven J. Hite and Dr. Julie M. Hite. Original educational field work commenced in 2000 and continued through 2004.

Initial data identifying all known secondary schools in the Mukono District of Uganda were collected during the summer of 2002 by this author and other field research assistants. Data collection was performed in conjunction with the BYU Uganda International Volunteers Program (IVP) student researchers, under the direction of Dr. Steven J. Hite and Dr. Julie M. Hite. Data gathered that year included demographic identifiers and the Global Positioning System (GPS) location of the school. There are few named roads, physical addresses, or other specific identifiers for building locations in

the Mukono District of Uganda, particularly in rural areas. Public transportation to many of the school locations was non-existent. Researchers employed the services of “boda boda” (small motorcycle) drivers for transport to outlying, limited-access areas of the District. These preliminary data were gathered in order to build a secondary school site database for continuing research purposes.

The following year this author was involved in the design of new survey instruments to be administered as part of the continuing educational research efforts in the Mukono District. A four-part school site resource survey was developed to capture data regarding personnel human resources, financial and administrative human resources, physical resources, educational resources, and some other administrative data. (See Appendix C, Part 2, for that portion of the survey which addresses financial resources.) These surveys were to be administered to appropriate administrators, teachers, and staff at each secondary school location. Having a strong academic background and prior professional experience in business and educational accounting, this author substantially contributed to those sections pertaining to financial resources.

Primary financial data for this study were collected via these newly developed survey instruments. Surveys were administered by field research assistants of the BYU Uganda IVP during the summer of 2003 under the continuing direction of Dr. Steven J. Hite and Dr. Julie M. Hite. Financial resources data, as related to assessment of financial viability of these secondary schools, is the focus of this author’s interest and study and forms the basis of this project.

*Data Collection*

Two secondary schools were selected randomly for the initial survey testing. These schools were drawn from the pool of secondary schools identified as being within a five kilometer radius buffer-zone previously created by the ESRI Arc-GIS software (Mugimu, 2004, p. 100). This determination was based on GPS location readings gathered during field research conducted in 2002. Administrators at these two schools studied the surveys and indicated those areas that needed further explanations, clarifications, or other modifications. These relatively minor changes were approved by the field director.

The revised surveys were then administered to eight secondary schools, chosen via random selection with replacement, and minor changes were again made to the instruments. In total, approximately 600 variables were generated in this set of four survey instruments. However, only those data items relevant to financial resources were included in this project.

School resource surveys were administered to 74 secondary schools in Mukono District of Uganda during the summer of 2003. Approximately 10 to 12 field research assistants gathered data under the direct supervision of BYU IVP field director Joshua Rew and the administrative assistance of native Ugandan BYU PhD candidate Christopher B. Mugimu. Two letters of introduction, one from the Permanent Secretary of MOES and another from the research project directors printed on BYU letterhead (see Appendix B) explaining the project, its purpose and background, were presented to the schools before the surveys were administered.

In addition to administering the surveys, these field research assistants gathered supplementary data through observations and interviews. School visitations required on-location contact of approximately two to eight hours, depending on the size and complexity of the school. The difficulty and length of travel time occasionally necessitated more than a single one-day trip to collect data at a given location. At the conclusion of the survey administration, field research assistants left a token of appreciation with the schools. These nominal gifts took the form of textbooks, maps, sports equipment, and certificates of recognition (Mugimu, 2004).

Overall, the schools' reception of the field research assistants and the survey was positive. According to the field director, Joshua Rew, "The most significant problem with respect to data capture is that financial data is sensitive data and it is possible that many administrators 'doctored' their data" (J. Rew, personal communication, February 15, 2006). However, Rew also noted that many of the administrators referred to their financial records in answering the questions pertaining to financial resources.

#### *Data Entry*

Data were transcribed into an Access database at BYU by paid undergraduate research assistants during Fall 2003 and Winter 2004 semesters. This data entry was conducted under the continuous mentoring and monitoring of field administrator/BYU EDLF master's degree student/research assistant, Joshua Rew, and principal investigator, Dr. Julie M. Hite.

A copy of the data from the financial section of the resources surveys as well as selected identifying and demographic data for each school was transferred to an Excel spreadsheet format (see an example of these spreadsheets in Appendix E) and forwarded

to this researcher for further review and analysis. This author then identified data by question number and keyed the data to a master data identification list for financial resources.

The original data are archived in an Access database under the direction and protection of principal investigator, Dr. Julie M. Hite. Access to this database is limited to only those researchers who have express consent and training. Periodic updates are made to the database as necessary and/or available (J. Rew, personal communication, February 15, 2006).

#### *UNEB Scores*

UNEB national test score data were procured in 2003 from the Uganda government's Ministry of Education and Sports (MOES) under the IRB and direction of Dr. Steven J. Hite and Dr. Julie M. Hite. Scores are reported by school testing site. Only 59 of the 74 secondary schools in the Mukono District of Uganda have the distinction of designation as a UNEB site.

The author obtained permission to access the UNEB data from the principal investigators, who maintain overall database security. These data were used as a measure for quality of education. The UNEB data were compared with the select financial measures, identified by the model for assessment of fiscal viability, to determine what, if any, relationship existed.

#### *Revenue Reports*

It is difficult, if not impossible, to obtain formal financial statements for secondary schools in Uganda. Only public companies are required by the Companies Act

to submit complete sets of financial statements with the Registrar of Companies, and compliance is poor (Uganda Accounting and Auditing ROSC, 2005).

#### *Identifying Schools That Filed Revenue Reports*

In search of some means of obtaining information that would generally be found in formal financial statements, it was discovered that business organizations are required to file revenue reports with the Uganda Revenue Authority (URA). These reports, which may closely resemble formal financial statements, are the basis for taxation by the Ugandan government.

In an attempt to identify those secondary schools for which revenue reports would be available, Question 52 of the Headmaster Survey asked this question: “Did you file revenue reports last year with government, district or town assessors?” Positive responses were given by 36 of the 59 UNEB schools.

This response raised questions as to which schools are required to file reports and under what circumstances the reports must be filed. According to Section 92 of The Income Tax Act, Cap. 340, a publication of the Uganda government, regarding “furnishing of return of income,” it is found that (1) “every taxpayer shall furnish a return of income for each year of income of the taxpayer...,” and that (2) “A taxpayer carrying on business shall furnish with the taxpayer’s return of income a statement of income and expenditure and a statement of assets and liabilities” (“The income tax act cap. 340”, 1997, p. 7102-7103).

Further investigation revealed that Section 2 of the Income Tax Act allows for *exempt organizations*. An explanation of exempt organizations is provided by Pius K.



Bahemuka (2004), a professional accountant and former Chief Executive of the Institute of Certified Public Accountants of Uganda (ICPAU):

[An] exempt organization is defined as any company, institution or irrevocable trust which is...(ii) a religious, charitable or *educational institution* [italics added] of a public character....It is not clear what 'of a public character' in (ii) above means. However, it is clear that an organization exempt from tax (say a *school* [italics added]) must be established for the benefit of all people without any discrimination provided of course it fulfills the minimum requirements. Therefore where the income from an educational institution will *benefit one or more individuals* [italics added] that institution cannot claim to be an exempt organisation. In any case, it is important to note that the exempt organization must *apply for and obtain a ruling* [italics added] from the Commissioner that it is an *exempt organization* [italics added]. (p. 61)

From these sources it appears that all secondary schools in the Mukono District, except those that are clearly government-aided and have no private ownership, are required to file revenue reports. It would be logical to expect, therefore, that of the 59 UNEB designated schools, all 40 of which are private organizations (and therefore not exempt) should have filed revenue reports.

It was ascertained that of the 59 UNEB schools, 36 schools reported that they had filed the revenue reports. Some confusion comes with the realization that 11 of these 36 schools are self-reported government-aided schools, which we would expect to be exempt and, therefore, would not need to file revenue reports. In summary, 25 private schools reported filing revenue reports.

### *Obtaining Filed Revenue Reports*

During 2005, this author worked with Dr. Steven J. Hite, Dr. Christopher B. Mugimu, and various authorities and agents in Uganda to obtain copies of revenue reports for the schools reporting in the 2003 surveys that these reports had been filed. A search was made of Uganda Revenue Authority (URA) records for the 59 UNEB secondary schools from the Mukono District to determine which schools actually did file revenue reports. Filed reports were found for only 10 of the expected 25 private UNEB schools indicating that they had filed the reports.

In search of a plausible explanation for the low number (10) of filed revenue reports in comparison to the number (25) of private schools that responded that the reports had been filed, it was recognized that (a) respondents may not have been properly informed, and that (b) schools need not file unless they actually had an income. Therefore, the author concluded that only 10 non-exempt schools actually earned incomes and therefore filed revenue reports. This filing was, in itself, a filter for financial well-being. Those schools which were not profitable, essentially self-selected out of the analysis. Although it may have been beneficial to analyze the financial statements of the non-profitable schools, this was impossible; such financial statements simply do not exist.

Few revenue reports were filed in comparison to the numbers expected and the numbers reported. The following speculations are offered regarding the implications of this condition.

1. Financial health overall for secondary schools in the Mukono District is relatively poor. Many of these schools are relatively new and may be

- experiencing financial difficulties. Indeed, Dr. Mugimu indicated that this may well be the case. He noted that quite a number of schools in the District have failed or are threatened by the realistic probability of failure. This underscores the great need to identify those factors of a financial nature that are critical to financial well-being in secondary schools in the Mukono District (C. B. Mugimu, personal communication, November 16, 2005).
2. Although the number of revenue reports (the sample population; n=10) may be considered too small to have statistical significance in regression models, descriptive statistics for the schools that have filed revenue reports generated a wealth of information upon which to begin the process of building a model for assessment of financial viability.

#### Data Analysis

Data derived from copies of these revenue reports were entered by the author into Excel spreadsheets. This data was used for further analysis and application of business analysis techniques.

Data analysis using financial assessment tools identified in Chapter 2 was performed in conjunction with the three research questions posed in Chapter 1. These questions formed the basis for exploration of the development of a model for assessment of fiscal viability—a measurement of organizational financial health for the secondary schools in the Mukono District of Uganda.

## Methods

The three research questions identified in Chapter 1 provided the framework for analysis. Each research question is re-presented here. Data and methods appropriate to addressing each question are identified.

### *Research Question # 1*

Using business models for financial assessment, what analysis tools and financial ratios may be effectively applied to private secondary schools in Uganda in developing a model of fiscal viability?

This question indicated two areas of exploration. They are as follows:

1. Given the database, both from survey data relative to financial resources and from secured revenue reports, what analysis *could* be applied, i.e., was the data comprehensive and complete enough to use all five analysis tools identified in Chapter 2?
2. Identification was made of analysis tools and ratios that could be *appropriately applied* to this setting of private secondary schools in LDCs, i.e., what was relevant to the setting and the needs of these stakeholders?

In order to address this first research question, the author thoroughly examined the data derived from the financial resources surveys and from the revenue reports. Ideal conditions dictate access to very specific financial data. Each of the revenue reports had to be examined in detail to determine whether or not it is possible to apply each of the five analysis tools identified in Chapter 2. Briefly, the afore-mentioned analysis tools are (a) horizontal (longitudinal, trend or time series) analysis, (b) vertical analysis, (c) common size statements, (d) ratio analysis and (e) cross-sectional analysis.

A template for ideal financial statement content for a private secondary school in an LDC was constructed in an Excel spreadsheet format. Then, data from each of the 10 revenue report schools were entered into this template. Deficiencies, if any, were noted and the implications of those deficiencies were explored.

Application of each of the five analysis tools was then explored. Deficiencies, if any, were identified and addressed.

It was anticipated that the most commonly used of the five analysis tools, ratio analysis, would be the focus of much of the data analysis. As noted in Chapter 2, financial statement ratio analysis is often grouped by function or area of concern such as profitability, efficiency, liquidity, solvency, leverage, or cash flows. Specific ratio formulas are commonly utilized within each of these groupings. This phase of analysis applied formulas, within groupings, to the data previously entered into the ideal template.

The meaning, usefulness, and ease of calculation of each of these formulas were also addressed. Appendix D outlines the ratio analysis groupings and respective formulas. The following is provided as an example of this analysis:

1. *Name of ratio grouping:* Liquidity
2. *Intent or function of this ratio grouping:* Measure the ability of an organization to meet its short-term obligations
3. *Name of specific ratio:* Current Ratio (also known as the Working Capital Ratio)
4. *Formula for this ratio:* Current Assets / Current Liabilities

5. *Where the data for this ratio can be found in the database:* The Assets section and Liabilities section of the Balance Sheet found in the Revenue Report should contain this specific data.

6. *Use of this ratio:* This ratio is used both internally and externally. It is one of the most commonly used and widely recognized measures of short-term liquidity.

7. *Meaning/Interpretation of the ratio:* A ratio greater than 1.0 means that Current Assets exceed Current Liabilities, a positive indication. (This is also interpreted as having “positive working capital.”) This ratio is often compared to known industry standards. However, there is no known industry standard for secondary schools in Uganda. The industry averages (sample means) calculated in this project may now serve as industry standards or benchmarks, against which individual school ratios may be compared.

8. *Expected range of the ratio:* This depends on the “experience base” and can only be established as based on an analysis of specific data. However, the values could, theoretically, range from zero to a very large positive number. Normal values, however, would be expected in the range of perhaps 0.5 to 5.0.

9. *Appropriateness of this ratio in LDC settings:* This key ratio is extremely appropriate, relevant, and useful in LDC settings. A low Current Ratio indicates potential difficulties in meeting financial obligations. An extremely high ratio, on the other hand, may indicate inefficiency or stockpiling of current assets or inefficient leveraging activities.

An effort was made to identify those few (two to four) ratios in each ratio category that best (a) capture the essence of the category, and (b) can be calculated given

the data available. This simplification strategy sought to distil the conversation without losing its critical components.

A discussion of each of the ratios explored is provided in Chapter 4. An expanded explanation of each of those ratios found to be most useful in this setting is presented in Appendix F-15.

It was anticipated that this stage of the research would be exploratory. This question was addressed to determine which items in the database were usable as compared to an ideal database and what deficiencies existed. Analysis of this research question set the foundation for the proposed development of a model of fiscal viability.

#### *Research Question #2*

What transformations or modifications to standard business models of financial assessment are required to build an appropriate model of fiscal viability for private secondary schools in an economically developing country?

Building on the analysis performed in addressing Research Question #1, this question addressed the need for changes (if any) that must be made to the standard financial assessment models in order to build a fiscal viability model appropriate to the setting of secondary schools in LDCs. This question asked what could be gleaned and utilized from globally accepted corporate finance models and tailored to the needs of LDCs. It was recognized that there could be elements commonly utilized in these globally accepted corporate finance models that are not relevant to LDCs. Where identified, these elements were modified or deleted. This question again contrasted an ideal with reality and sought to describe a model that is both doable and useful.

This question was addressed by carefully looking at the findings of Research Question #1. The need and possibilities for changes to standard business models of financial assessment in order to construct a model of financial viability for secondary schools in a developing nation setting were then addressed.

Some anticipated possibilities were the construction of average ranges for ratios or inner quartiles. It was thought that perhaps a ranking system would emerge. The data itself (or lack thereof) had to guide this stage of the analysis.

### *Research Question # 3*

Using quantitative analysis, is there an apparent link between this newly developed model and the standard quality measurement of student performance, i.e. Uganda national examination scores (J. M. Hite, Hite et al., 2004b)?

The model proposed for creation in addressing Research Question # 2 was to provide some way to compare the financial health of the secondary schools with the UNEB test scores of that school. This was an attempt at a comparison of financial health with quality of education. This question sought to identify a relationship (if indeed there was one; it could have been a negative or inverse relationship rather than a positive relationship) between institutional financial well-being (fiscal viability) and quality of education offered by the institution in this LDC setting.

Although it was anticipated that other analysis possibilities might emerge in this exploratory process, one conceivable approach was seen as the formulation of a ranking system for financial health that could be compared to a ranking based on test scores. It was anticipated that this could also be explored by applying the standard statistical



procedure of a Pearson Product Moment Correlation, using the fiscal viability ratios and the UNEB scores, both of which are interval type data.

### Conclusion

This chapter explored and outlined the methods to be used for data analysis. In an exploratory mode, it was anticipated that some modifications would be needed as the analysis progressed. Chapter 4 addresses the findings of this research. Chapter 5 provides a discussion of the findings and offers concluding remarks.

## CHAPTER 4

### ANALYSIS AND FINDINGS

This chapter describes the process of data examination, analyses, and findings. In answering the three research questions, a comprehensive approach was taken to analyze the three data sets described in Chapter 3. The reader is guided through this process as a basis for understanding financial statement analysis as it may be applied to secondary schools in an LDC setting.

The exploratory nature of this research dictated an iterative process between analyses and findings. Each finding informed the next analysis. This process is described in a chronological manner.

#### Survey Data Set Financial Analysis

When the data set was obtained via surveys administered in 2003, it was anticipated that enough financial data could be collected in a non-threatening manner to construct financial statements for each of the schools. Surveys may be a less-than-ideal manner of gathering reliable financial data. However, with no national requirement for schools in Uganda to provide audited financial statements (as opposed to the international corporate world where this generally is a requirement), the survey appeared to be the least expensive, most efficient and realistic method of collecting financial data for all the secondary schools in the Mukono District of Uganda.

All survey data were entered into Excel spreadsheets. To perform a financial analysis, the author found it necessary to re-arrange this data into a meaningful format. Templates were constructed for an “ideal” set of financial statements. These templates

were based on traditional content for formal financial statements of service-related organizations.

As explained in more detail in Chapter 2, a full set of formal financial statements includes: (a) an income statement showing revenues less expenses; (b) a balance sheet outlining assets, liabilities and owners' equity; (c) a statement of cash flows; and (d) notes to the financial statements. Templates were established for an income statement, a balance sheet, and a statement of cash flows that could be completed with data from each school in the study. Notes to the financial statements cannot be constructed on a template basis as they must be tailored to each organization. Notes outline specific accounting principles used by that entity, supporting schedules for specific calculations (such as tax liability or depreciation calculations), and other items that may impact the financial status of the entity.

### *The Survey Instrument*

After the templates were established, effort was expended to determine which questions from the survey data set could best provide the necessary financial detail to fill in each line item. (See Appendix F-1, "Template for Financial Statements.") A number of challenges were encountered with this approach to financial statement construction that rendered the attempt invalid. Some of the notable concerns follow.

1. Some survey questions contained terms that were not clearly and precisely defined in the survey instrument. This ambiguity provided the opportunity for various and diverse interpretations and responses. As discussed below, some data were obtained that indicated significant between-respondent variation, to the point

that insufficient consistency was found in the data to proceed with reasonable confidence with these particular responses.

2. Some of the survey questions were formatted such that responses were gathered as categorical data. While this is much easier for the respondent, it does limit analysis and interpretation for quantitative purposes. An attempt was made to use the categorical midpoints for further analysis, but this attempt was later abandoned. It is impossible to mathematically balance financial statements that are based on categorical data midpoints.
3. Data were incomplete or inaccurate. By definition, amounts that are labeled as totals should equal the mathematical sum of individual elements comprising that total. Indeed, in a number of instances, the totals indicated by the respondents were significantly out of balance to the actual calculated totals.

#### *Responses to Survey Instrument*

A simple exercise was conducted to determine the closeness of the survey data with the revenue report data. Two key figures were chosen: total assets (which is a critical balance sheet figure) and total revenues (which is a critical income statement figure). Question 76 from Part 2 of the survey was intended to identify the total assets of the school. Responses to this question were compared with the total assets figure obtained from the revenue report of each school. A difference between the two figures was calculated and then expressed as a percentage to quickly identify the magnitude of the misstatement. Percentage differences ranged from 18% to 99%. A similar process was conducted to compare revenues. Question 74 of Part 2 was intended to identify revenues which were then compared to revenues as identified on the revenue reports. Differences

between these figures ranged from 18% to 76% misstatement. The great disparity in these comparative numbers indicated that the survey data set was not a valid or reliable source for financial data when compared to data from audited formal financial statements. At this point in the analysis, it was determined that construction of financial statements from survey data would render meaningless results. Therefore, the attempt to create financial statements from survey data was abandoned.

This analysis confirmed the assertion that financial data must be obtained from sources that are reliable and consistent. Ideally, that data source should also allow for some type of verification of the data.

Although the survey data set did not provide useful, reliable financial data, it did contain a large amount of information that proved useful in understanding the financial background and status of the individual schools. It also provided a basis for comparison of contextual elements between the data set at large and the limited number of schools in this study. Data elements that were particularly useful included age of the school, its size as expressed in terms of student enrollments, gender composition, student/teacher ratios and boarding versus day student status. Descriptive statistics for both the sample and the population are presented in Appendix F-2, "Contextual Variables from the Survey Data Set."

#### Revenue Report Analysis

As previously stated, revenue reports were successfully retrieved from the Uganda Revenue Authority (URA) for 10 of the 59 UNEB schools in the Mukono District. These revenue reports are basically audited formal financial statements that have been filed with the URA for tax purposes. They are required to be filed only if the

school was profitable for the fiscal year. The researcher assumed that schools that did not file had no profit. This may or may not be a correct assumption. Other explanations may exist, but could not be easily found. Based on this assumption, the 10 schools that filed revenue reports most likely constitute those schools in the Mukono District that enjoy the greatest profitability and financial stability.

#### *Accuracy and Reliability of Revenue Reports*

Financial statements, such as revenue reports, that have been audited must contain an auditor's report. This is not a guarantee that the financial statements properly report every financial aspect of the reporting entity. However, the auditor is required to give a *clean opinion* or else *qualify* the opinion for specific, identified reasons. A qualified opinion may be rendered for such conditions as inconsistencies in recording or reporting or lack of consistent application of GAAP. Only one of the ten revenue reports has a qualified opinion and that one did not indicate a material deficiency in the report. One school's revenue report was apparently not audited as it was not accompanied by an audit report. The other eight were accompanied by clean audit reports, similar to those rendered on corporate financial statements worldwide.

Therefore, it can be assumed that these statements were prepared according to GAAP, consistently applied over the time periods covered by the financial statements. While this does not necessarily indicate accuracy, these auditors' statements do provide a reasonable level of confidence in the revenue report data set.

#### *Data Difficulties, Inconsistencies, and Explanations—Revenue Reports*

A number of challenges were encountered in analyzing the revenue reports. Those concerns that impact the analysis process or its outcomes, along with explanations of how

each issue was resolved, are provided in detail in Appendix F-3, “Data Difficulties, Inconsistencies, and Explanations—Revenue Reports.” A brief list is provided here.

1. Inconsistency in titles used in financial statements
2. Ambiguity in titles
3. Summary data
4. Inconsistencies in balance sheet presentations
5. Inconsistencies in owners’ equity presentation
6. Technical difficulties
7. Incomplete reports
8. Inconsistency in fiscal years

#### *Basis for Calculation of Averages*

Not all of the revenue reports contained all of the expected financial statements. The basis for calculating average (mean) figures, i.e., number of cases used in the denominator, varies with the financial statement from which those averages are calculated. Industry averages were calculated only on the actual number of financial statements available in the revenue reports.

One revenue report was incomplete; it contained no balance sheets. Balance sheet averages, therefore, are based on only nine schools, and one of those had no comparative data (a balance sheet was included for only one fiscal year). In total, 17 balance sheets were available and formed the basis of calculations for industry average ratios requiring balance sheet data. (Eight schools presented two fiscal years’ worth of balance sheet information, one school had only one fiscal year and one school did not have a balance

sheet.) The exception is that calculations relative to contributed capital versus earned capital could only be performed for 13 cases as per number 5 above.

Income statement data were available for 19 cases (9 of the 10 schools included income statements for two fiscal years). One school showed no comparative data.

Only 4 revenue reports of the 10 obtained included cash flows statements; two of those do not have comparative data for the prior fiscal year. Therefore, formal financial analysis was not performed on cash flows statements. The author notes, however, that traditionally, financial statement analyses have focused most heavily on balance sheets and income statements. Cash flows statements, although very useful if provided, are relatively new to the financial analyses scene (Bergevin, 2002).

#### *Financial Analysis of Revenue Reports*

The author recognizes that not all readers of this dissertation will be equally familiar with accounting and financial analysis. To assist in the reader in understanding financial statements—the foundation for financial statement analysis, a brief description of the accounting equation and financial statement content and purpose is provided in Appendix F-6, “Brief Explanation of Accounting and Financial Statements.”

Data from the revenue reports, in the form of formal financial statements, were entered into Excel spreadsheets for further mathematical computations. All five financial statement analysis tools identified in Chapter 2 were applied to the financial statement data obtained via the revenue reports. Brief descriptions of the purpose, the process, and the findings of each of these analyses are provided here.



### *Horizontal Analysis*

Horizontal analysis is valuable in spotting trends and evaluating how an entity is performing over time. Financial data over many years was not available for this study. Most revenue reports used in this analysis contained data for two years. Although this limits the usefulness of horizontal analysis, one important issue emerged. Some schools were growing at a tremendous rate. Financial stability of any entity is affected by how well expenditures can be tied to revenues in percentage terms. For example, in School #1, a school that was only two years old in 2003, it was seen that although overall revenues increased by 85% compared to the prior year, the expenses for salaries and wages very closely followed that increase at 89% compared to the prior year. At the other extreme, another school showed a 12% decrease in net revenues but a 26% increase in salaries and wages and a 139% increase in financing expenses. According to standard financial analysis, the latter school would be considered to be clearly experiencing financial distress. A model for assessment of fiscal viability must address the relationship of changes in composition of financial statement items over time.

A brief example of horizontal analysis is provided. Table 4.1 presents the results of horizontal analysis for the income statement and balance sheet for School X.

The following observations are made based on data in Table 4.1. They are representative of the type of observations made in horizontal analysis.

1. In order to maintain the same level of net income, the changes in percentages in total expenses would have to approximate the changes in percentages in revenues. In this case, the revenues increased by 85%; total expenses increased

Table 4.1

*Horizontal Analysis: Income Statement and Balance Sheet, School X*

Income Statement		Balance Sheet	
(by category)		(by category)	
	Percent change from 2002		Percent change from 2002
Net Revenues	85.23358	Quick Assets	-22.27003
Salaries & Wages	89.19143	Current Assets	126.62706
Administrative Costs	33.49853	Fixed Assets	80.960458
Depreciation Expense	89.11671	Total Assets	83.980084
Finance Charges	183.2831	Current Liabilities	155.21969
Other Expense	94.99271	Long-term Liabilities	--
Bad Debts Expense	94.77089	Total Liabilities	155.21969
Net Income	510.3189	Capital	0
		Retained Earnings	610.31886
		Total Owners' Equity	54.66833
		Total Liabilities +	
		Owners' Equity	83.980084

by only 72%. The magnitude of these changes is seen in the net income which (based on a small monetary figure in the prior year) increased by an impressive 510%. It appears that management was able to increase revenues while keeping a relative hold on overall expenses. This practice, if sustained into future fiscal years, will contribute to long-term profitability.

2. The finance charges show a relatively large increase at 183%. A large increase in financing charges often indicates that the entity is suffering from cash flow problems which may be due to school policies, poor collection of receivables, or management deficiencies.
3. Current assets increased by 127 % while quick assets declined by 22%. In this case, quick assets were mostly composed of cash balances. This supports the above assertion that there could be cash flow difficulties.
4. Retained earnings increased by 610%, an indication that the increased earnings are being retained by the school and were not paid out to the owners in this fiscal year. This suggests that owners may be more concerned about long-term viability than they are about short-term profitability.

The numeric results of horizontal analysis for all 10 balance sheets and income statements are presented in Appendix F-7, “Summary of Horizontal Analysis—Balance Sheets and Income Statements.” Percentage changes are summarized for each of the 10 schools individually. Mean values calculated from the school information are also presented as Appendix F-8, “Horizontal Analysis—Industry Averages; Percent Changes for Balance Sheets and Income Statements.”

#### *Vertical Analysis*

In the vertical analysis stage, every item on the balance sheet was expressed as a percentage of total assets. This facilitated analysis of relationships between various components of assets, liabilities, and owners’ equity. Vertical analysis applied to the income statements expressed each item as a percentage of net revenues, enabling the author to examine relationships between the various components of revenues and

expenses. The relative size of each component signaled its significance and effect on net income, the bottom line measure of profitability for the fiscal year.

Vertical analysis was performed on each element of each financial statement as presented in the revenue reports. The numbers and titles of accounts were not consistent between schools to allow direct comparison, but provided the author with an overall understanding of the composition of each individual school's financial statement content and the relative importance (percentage of total) of each financial statement item.

Vertical analysis of the individual school financial statements lays the foundation for common size analysis. An example of vertical analysis for one school's income statement is shown in Table 4.2.

#### *Common Size Statements*

Common size statements are an extension of vertical analysis. The thrust of this analysis tool is to allow comparisons between schools. By grouping balance sheet items into several predetermined categories and expressing each as a percentage of assets, the author was able to make comparisons between entities as to the composition of balance sheet items. For example, it was found that 3 of the 10 schools in this study had long-term liabilities of significance. This finding indicates that these schools have chosen to finance their operations and acquisition of fixed assets through the use of debt financing rather than through owners' contributions. Generally speaking, common size statements help a financial analyst to identify owners' and management's practices and strategies relative to those of other schools.

Table 4.2

*Example of Vertical Analysis of an Income Statement, School X*

	Uganda Schillings	% Revenue
Income		
School Fees	<u>173,672,914</u>	<u>100</u>
Expenses		
Food Stuffs	33,662,050	19.38244
Stationery & Printing	4,464,850	2.570263
Uniforms	5,977,000	3.441527
Burial & Condolences	83,500	0.048079
Transport & Travel	13,398,500	7.71479
Firewood	3,901,000	2.246176
Salaries & Wages	51,510,600	29.65955
Water	2,332,000	1.342754
General Repairs & Maintenance	1,458,800	0.38997
Staff Accommodation	2,410,000	1.387666
Games & Sports	1,975,000	1.137195
Students' Medical Expenses	4,935,600	2.841894
Electricity	3,089,900	1.779149
Entertainment	154,400	0.088903
Cleaning & Sanitation	1,912,300	1.101093
Staff Welfare	2,166,000	1.247172
Clubs & Seminars	1,532,900	0.882636
Examination Expenses	10,864,100	6.255495
Phone & Postage	916,000	0.527428
Lighting	703,900	0.405302
Security	1,932,000	1.112436
Advertising	2,482,700	1.429526
Compound Maintenance	1,443,000	0.830872
Bank Charges	2,099,822	1.209067
Audit charges	1,000,000	0.575795
Repairs & Renovations	4,786,700	2.756158
Church Expenses	148,500	0.085506
Practical Materials	1,829,300	1.053302
Depreciation on Fixed Assets	<u>5,452,320</u>	<u>3.139419</u>
Total Expenses	<u>168,621,742</u>	<u>97.09156</u>
Profit	<u>5,051,172</u>	<u>2.90844</u>

In order to facilitate comparisons of financial statements among the 10 schools, each financial statement item was condensed into predetermined summarized categories. Calculations were performed to express these summarized categories as percentages of the total. A summary of these comparative figures is given in Appendix F-9, “Common Size Balance Sheets, Two Years for Each School” and Appendix F-10, “Common Size Income Statements, Two years for Each School.” Examples of common size statements for one school are provided in Tables 4.3 and 4.4.

Table 4.3

*Example of Balance Sheet Expressed in Common Size Percentages, School X,  
2 Fiscal Years*

Common Size Balance Sheet		
School X		
(All figures are expressed as percentages of Total Assets)		
	2003	2002
Assets:		
Current Assets	8.145081	6.612329
Fixed Assets	<u>91.85492</u>	<u>93.38767</u>
Total Assets	<u>100</u>	<u>100</u>
Liabilities + Owners' Equity:		
Total Liabilities	40.4387	29.15103
Total Owners' Equity	<u>59.5613</u>	<u>70.84897</u>
Total Liabilities + Total Owners' Equity	<u>100</u>	<u>100</u>

Table 4.4

*Example of Income Statement Expressed in Comparative Common Size Percentages, School X, 2 Fiscal Years*

Common Size Income Statement		
School X		
(All figures are expressed as percentages of Net Revenues)		
	2003	2002
Net Revenues	<u>100</u>	<u>100</u>
Expenses		
Salaries & Wages	18.16075	17.78083
Administration	24.56413	34.08354
Depreciation on Fixed Assets	6.600057	6.464538
Financing Charges	1.653614	1.081268
Other Expenses	38.82811	36.88481
Bad Debt Expense	<u>0.944064</u>	<u>0.897836</u>
Total Expenses	90.75072	97.19282
Profit	<u>9.24928</u>	<u>2.807184</u>
Total Expenses + Profit	<u>100</u>	<u>100</u>

Mean values calculated from individual school information are presented as Appendix F-11, “Industry Averages—Common Size Statements.” These averages represent an approximation of *industry averages* for balance sheets and income statements in common size format for secondary schools in the Mukono District.

### *Ratio Analysis*

Ratio analysis explores common relationships between items on the financial statements. By combining factors from all financial statements in a logical and methodical manner, a more comprehensive assessment may be made of the financial condition of a school.

Appendix D provides a discussion of ratio analysis and identifies ratios that are typically calculated in financial statement ratio analyses, their components, formulas, and usefulness. Each of these 38 ratios was carefully examined in light of the data contained in the revenue reports to determine which, if any, could be calculated. Appendix F-12, “Ratio Analysis—Calculability & Modifications Necessary for LDC Setting” addresses each of the 38 ratios and discusses challenges encountered when applying each formula to the revenue report data set.

Sufficient data (with a few minor modifications) were available to calculate 13 of the formulas identified in Appendix D. These 13 financial ratios are presented in Appendix F-13, “The 13 Viable Financial Ratios.” Notably, those ratios that required “cash from operations” could not be calculated. Only 3 of the 10 revenue reports included cash flows statements which identified this amount. The others did not contain enough data to reliably calculate “cash from operations.” Therefore, the author determined that all calculations that contained the component “cash from operations” in their formulas should be dropped from further consideration in this analysis. Two more ratios, although calculable were dropped as they were very close in composition to other ratios and provided little additional information given this data set. The 13 remaining ratios were applied to the data found in the revenue reports. Results of these calculations



and further explanations are provided in Appendix F-14, “Cross-sectional Analysis—13 Financial Statement Ratios.”

An effort was made to further limit the number of ratios used in a model for assessment of fiscal viability in secondary schools in an LDC setting. After preliminary descriptive and correlation statistics were calculated, seven ratios were identified for further consideration. A listing of the *seven key ratios*, covering five areas of financial concern and their underlying formulas, is presented in Table 4.5. These ratios and their usefulness are discussed in greater detail in Appendix F-15, “Ratio Analysis—Details of Seven Key Ratios.”

Table 4.5

*Seven Key Ratios*

Ratio Group	Specific Ratios	Formula
Profitability Ratios	1 Profit Margin	Net Income/Net Revenues
	2 Return on Equity	Net Income/Total Equity
Liquidity Ratios	3 Current Ratio	Current Assets/ Current Liabilities
Solvency Ratios	4 Long-term Liabilities to Total Equity	Long-term Liabilities/ Total Equity
Leverage Ratios	5 Total Liabilities to Total Assets	Total Liabilities/ Total Assets
	6 Total Liabilities to Total Equity	Total Liabilities/ Total Equity
Asset Composition	7 Asset Mix	Fixed Assets/ Total Assets

As an example of the application, the seven key ratios plus one financial element are calculated for School X in Table 4.6. They are representative of the 10 schools in the sample.

Table 4.6

*Seven Key Ratios + One Financial Element for School X*

	School X	Ranking
1. Profit Margin	0.092493	3 of 10
2. Return on Equity	0.42933	1 of 9
3. Current Ratio	0.201418	5 of 9
4. Long-term Liabilities to Total Equity	0	4 of 4
5. Total Liabilities to Total Assets	0.404387	4 of 9
6. Total Liabilities to Total Equity	0.678943	4 of 9
7. Asset Mix	0.918549	7 of 9
8. Revenue per Student	546,724.70	8 of 9

*Cross-sectional Analysis*

Cross-sectional analysis builds on ratio analysis. Ratios for all schools may be compared to assess relative position. Comparison with industry averages for each ratio may also identify areas of financial strength or weakness. This financial assessment tool is very commonly used throughout the world. Although it may require considerable data manipulation and calculations to generate the appropriate ratio factors, the result—easy comparison between schools of key financial relationships—is well worth the effort. These key financial relationships allow this author, and future financial analysts, to more readily identify areas of comparative weakness and strength in an individual school.

Descriptive statistics for the seven key ratios are provided in Appendix F-16, “Seven Key Financial Ratios and Ranking.” For comparative purposes, each school’s values for these seven key ratios are also provided, along with rankings according to relative size of the ratio values. Table 4.7 provides, as an example of cross-sectional analysis, the comparative current ratio and relative ranking for each of the 10 schools in the sample.

Table 4.7

*Example of Cross-sectional Analysis: Current Ratio and Relative Rankings*

Current Ratio (Defined as Current Assets/Current Liabilities)		
School	Ratio	Relative Rank
1	0.2014	5
2	0.5571	2
3	0.0702	7
4	1.2186	1
5	0.0804	6
6	0.0434	8
7	0.384	3
8	0.328	4
9	0.0199	9
10	--	--

*Note.* Balance sheet data was unavailable for School #10.

### *Other Elements in Financial Analysis as Dictated by the Setting*

In the process of applying the five identified analysis tools, the author was led to ask whether there were other financial elements, outside the realm of the formal financial statement analyses, that may have a bearing on the fiscal viability of the schools in the sample. Comparison was made between what was desirable to know and what could be known given the limitations of the data set. One calculable financial measure was *revenue per student*. To obtain the numeric values for this element, *net revenues* from the revenue report of each school were divided by *total number of students* obtained from the survey data set. Comparative rankings were assigned and an industry average was calculated.

This new financial element could be a critical factor in assessing fiscal viability of a school. A high ranking could be an indication of high quality of education. It could also indicate that the school enjoys a good reputation, can charge more for its services, and enjoys the opportunity for greater profits. If this were true, it would positively affect the school's long-term existence and its fiscal viability. Alternatively, a high ranking could mean that the school is run inefficiently and must charge more to cover its expenses. The long-term implication here has a negative impact on fiscal viability.

### *Ranking: A Supplementary Analysis Tool*

While ranking is not one of the financial analysis tools identified in the literature review, it has usefulness in ascertaining the relative position of an individual school compared to other schools in a study. It is not the absolute number of the ranking that is of interest, but its relativity. For example, mid-range rankings on a particular measure (for example, current ratio or UNEB scores) would generally give a financial analyst little

concern. But measures in which the school's ranking is exceptionally high or exceptionally low (like a low ranking of 9 or 10 out of 10 on a school's current ratio or the highest ranking of 1 on UNEB scores ) would signal to an analyst that further investigation may be merited. Investigation of a school with a superior ranking may reveal information leading to a recommended best practice and may, if shared and implemented, be used to the future benefit of schools with lower rankings.

Table 4.8 shows an example of cross-sectional analysis with ranking. The profit margin was calculated for each school as Net Income/Net Revenues. This is a widely recognized measure of profitability and is based on figures presented in the income statement of each of the school's revenue reports. After the profit margins were calculated for each school, a relative rank was assigned, such that the school with the largest profit margin (School 3 in this analysis) was given a ranking of 1. This process continued on down to the lowest (School 6) which was assigned a ranking number of 10, an indication of the lowest profit margin in the sample group. In this sample, the number 1 ranked school has a profit margin of 9.55%. The lowest ranked school has a negative profit margin, a loss, of almost 13%.

While ranking is an ordinal measure and was not used in any statistical calculations in this study, it allowed the author to quickly identify areas of potential concern or interest. Rankings for each of the 15 variables used in correlation explorations (the seven key financial ratios, one additional financial measure "revenues per student," the six contextual variables from the survey data set described below, and the UNEB mean) is provided in Appendix F-17, "15 Variables, School Values and School Rankings."

Table 4.8

*Example of Ranking: Profit Margin—Ratios and Relative Rankings*

Profit Margin (Defined as Net Income/Net Revenues)		
School	Ratio	Relative Rank
1	0.092492801	3
2	-0.061616977	9
3	0.09550227	1
4	0.024646838	5
5	-0.02148598	7
6	-0.129932202	10
7	0.029084397	4
8	0.018250181	6
9	-0.028735402	8
10	0.095076564	2

Fifteen variables were used in analyses and correlations. Comparing school rankings on these variables allowed the author to more easily evaluate the relative financial position and fiscal viability of each school.

#### UNEB Data Set

From the third data set, UNEB scores, a weighted average score (similar to a GPA) for each school was calculated on a 6-point basis. A mean score for each of the 10 schools was then calculated. Table 4.9 shows each school's mean score and its relative ranking.

Table 4.9

*UNEB Scores and Ranking*

School	1=6pts	2=5pts	3=4pts	4=3pts	5=2pts	6=1pt	TotPts	#Stdnts	WtdAve	Rank
1	78	240	120	30	4	0	472	103	4.582524	9
2	60	165	80	9	0	1	315	67	4.701493	8
3	24	95	88	45	0	7	259	67	3.865672	10
4	126	185	32	3	2	0	348	68	5.117647	7
5	306	150	0	0	0	0	456	81	5.62963	2
6	300	390	72	18	0	0	780	152	5.131579	6
7	264	80	0	0	0	0	344	60	5.733333	1
8	300	220	56	12	0	1	589	113	5.212389	5
9	426	225	8	0	0	0	659	118	5.584746	3
10	306	255	4	3	0	0	568	104	5.461538	4

The mean score of these 10 UNEB scores was calculated as 5.1021. The mean score was also calculated for the entire UNEB school population for comparison purposes. The population mean was 4.4335. A t-test was run using SPSS to confirm that the mean score of the sample (n=10) is statistically different from the mean score of the population (n=59).

The UNEB scores are used in this research to represent quality of education. The statistically significant difference in UNEB mean scores between the sample and the population raises questions that will be addressed in Chapter 5. The observation is made here that 9 of the 10 sample schools were in the top 21 of 59 schools in the population.

There was one outlier school in the sample which fell into the third quartile of the

population distribution. A visual confirmation of the differences is presented in Figures 4.1 and 4.2. Respectively, these histograms show the distribution of the sample UNEB means and the population UNEB means.

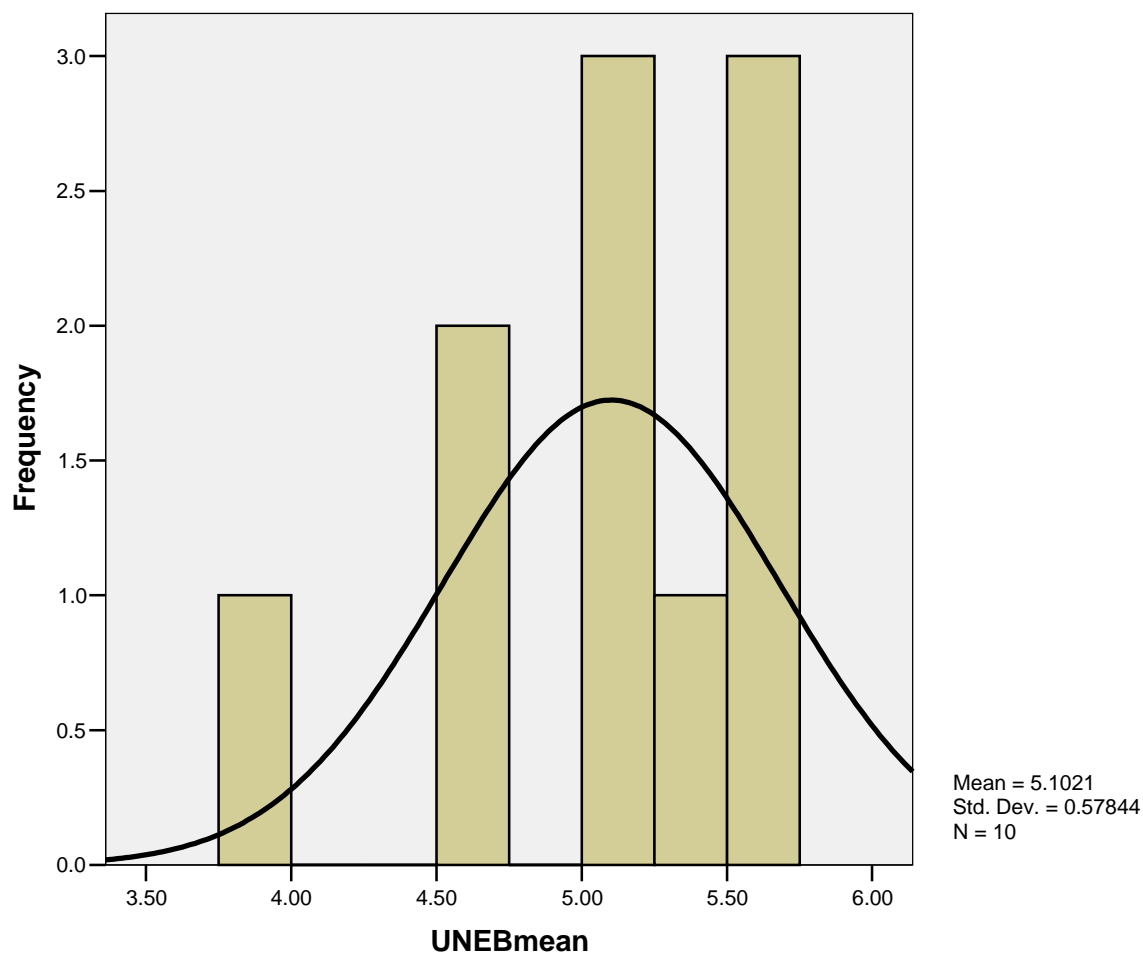


Figure 4.1 *Histogram Showing the Distribution of UNEB Scores for 10 Schools*

Appendix F-18, “UNEB scores—Comparisons between Sample and Population” provides additional observations and comments regarding the differences between UNEB mean, and the graphic presentations of the distributions of scores. The weighted average of UNEB scores for the 10 schools was used as a variable for correlation purposes.



### Correlations between Data Set Elements

Following an in-depth analysis of each of the data sets, attention was directed to identification of possible correlations between data set elements. Ultimately 15 variables were chosen for correlation: 6 from the survey data set, seven key financial ratios plus 1 more financial element, and the UNEB mean. From the survey data set, the following six

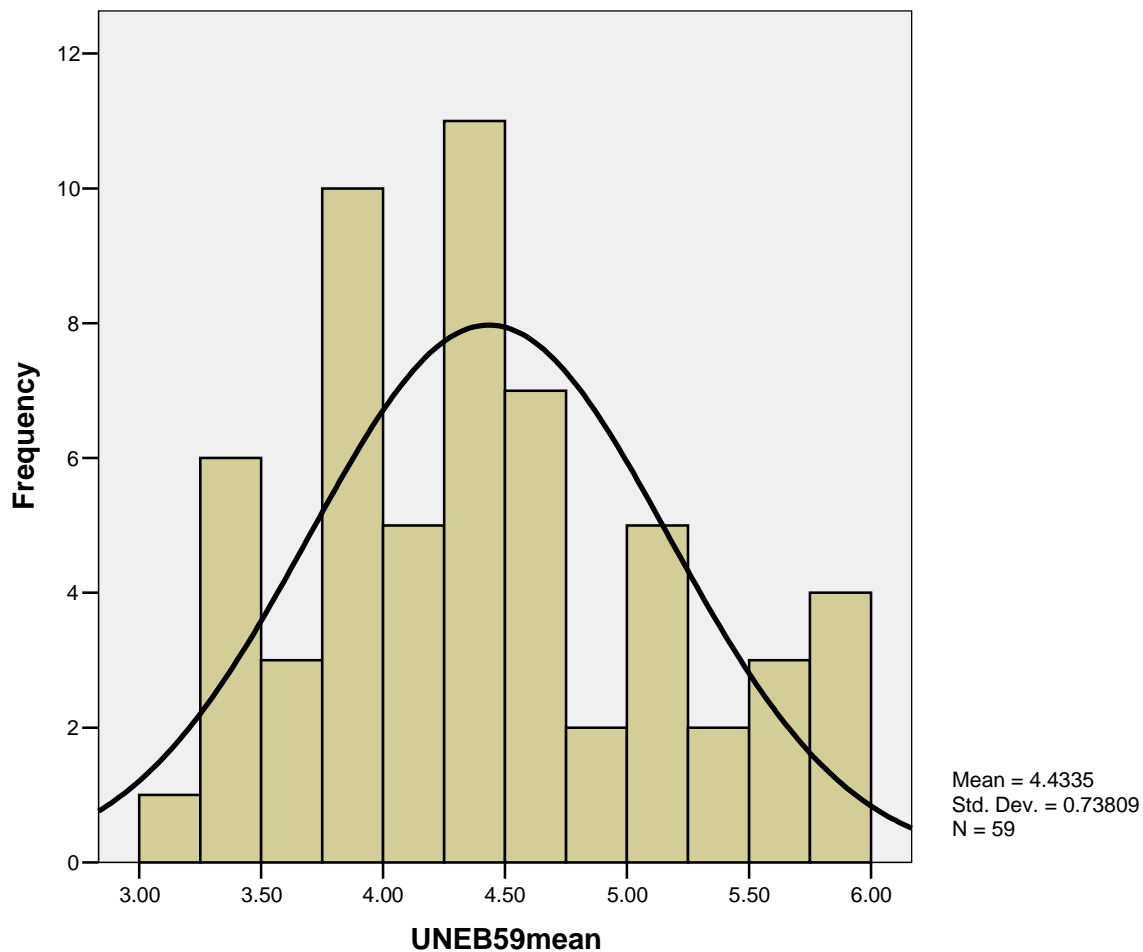


Figure 4.2 Histogram Showing the Distribution of UNEB Scores for 59 Schools

contextual elements were identified as correlation variables. The first two elements were obtainable directly from survey data. The remaining four elements required preliminary calculations to obtain values that could be used for statistical calculation purposes.

1. Size of school as expressed in total number of students
2. Number of students who sat for the UNEB exams at the school
3. Age of school
4. Percentage of boarding students at the school
5. Percentage of female students at the school
6. Student/teacher ratios

Financial variables were chosen from the revenue reports to be used in correlation statistics. All seven key financial ratios were used as well as a newly created eighth financial variable, revenue per student. This new variable was intended as a measure of how expensive each school is from the perspective of a student and the student's family. On a rather cursory level, when correlated with UNEB scores, it could address the question: "Does more expensive mean better quality?"

Bivariate Pearson correlation statistics were calculated using SPSS software. The use of one-tailed correlation statistics yielded 23 relationships at the .05 significance level. These 23 significant correlations between the 15 variables were divided into 5 potential categories for presentation and examination. The categories are briefly discussed here. (A detailed listing of all 23 correlations, by category, is provided in Appendix F-19, "Correlations between UNEB Means, Financial Ratios, and Contextual Variables.")

1. UNEB means with financial variables. These correlations directly address Research Question #3. One correlation of significance was found.
2. UNEB means with contextual variables. One correlation of significance fell into this category.
3. Financial variables with financial variables. High correlations in this category generally indicate that there is a structural correlation. Investigation of these correlations reveals that there is generally a common factor in the calculation of the ratio. Typically the numerator of the two ratios is identical or closely related or the denominator of the two ratios is identical or closely related. All four correlations in this category are structural correlations.
4. Contextual variables with contextual variables. While these correlations revealed several potentially interesting and statistically significant correlations, these lie beyond the scope of this study. Six correlations were found in this category.
5. Financial variables with contextual variables. Eleven correlations of significance were found in this category. The implications of these findings are discussed in Chapter 5.

While the full statistical results of the correlations between the 15 variables may be of interest to the reader, the output is too large and cumbersome to include in this document. Table 4.10 presents the correlation statistics for only one variable, the UNEB scores, compared with the 14 other variables: the seven key financial ratios, the revenue per student variable, and six contextual ratios. This correlation addresses Research Question #3 about financial well-being (as measured by any of the financial variables) versus quality of education (as measured by UNEB scores).

Table 4.10

*Correlations of UNEB Scores with 14 Other Variables*

	UNEB Mean			Correlation
	Mean	StdDev	Range	
Profit Margin: Net Income/Net Revenues	0.0113	0.07393	-0.13-0.096	-0.30025
Return on Equity: Net Income/Total Equity	0.0297	0.20285	-0.25-0.49	-0.33529
Current Ratio: Current Assets/Current Liabilities	0.3226	0.38214	0.02-1.22	0.028554
Long-term Liabilities/Total Equity	2.3738	4.41584	0-11.49	0.401839
Debt Ratio: Total Liabilities/Total Assets	0.4439	0.3477	0.03-0.94	0.57447*
Debt to Equity Ratio: Total Liabilities/Total Equity	3.34336	5.52664	0.03-15.26	0.443374
Asset Mix: Fixed Assets/Total Assets	0.9463	0.9483	0.86-1.00	0.047524
Revenues per Student	694351	193660	323413-970584.9	0.099401
Age of School	8.8	10.2	2-36	0.239104
Size-Total # Students	649.2	338.4	208-1224	0.52952*
Size-Total # UNEB Students	93.3	29.7	60-152	0.192654
Percent Female	55.6163	20	42.86-100	0.094571
Percent Boarding	85.162	20.8	42.69-100	0.364323
Student/Teacher Ratio	22.8259	8.4	11.89-37.66	0.136244

\* p &lt; .05.

Only one correlation of significance was found at the .05 level between UNEB scores and any of the financial variables. UNEB mean and Total Liabilities/Total Assets showed a positive correlation of .574. In addition, one correlation of significance was found between the UNEB means and a contextual variable—school size as measured by total number of students. Discussion of this significant correlation and other findings is presented in Chapter 5.

### Conclusion

In this chapter, exploratory methodology was used to study the three data sets and their relationships to each other. The iterative process of analysis and findings has been described and illustrated. Findings of each analysis informed the next step.

Several findings had significant impact on the direction and scope of the research. Survey data were found to be unsuitable for financial analysis. However, survey data did yield helpful contextual data. Although some deficiencies were encountered, revenue reports yielded more consistent and reliable financial data. Too few schools provided cash flows data for a reliable cash flows analysis to be undertaken. The five financial statement analysis tools were successfully and effectively applied to revenue report data. Sample UNEB scores were examined and compared to the population UNEB scores. A statistically significant difference was found between their means. Correlations were run between financial, contextual, and UNEB variables. Correlations of significance between these variables are discussed in Chapter 5.

## CHAPTER 5

### DISCUSSION AND CONCLUSIONS

This dissertation focuses on financial analysis and assessment of fiscal viability for secondary schools in the Mukono District of Uganda. The research and analysis were driven by three research questions. In pursuit of answers to these questions, three data sets were analyzed. Financial statements contained in revenue reports from 10 UNEB schools, submitted to the Uganda Revenue Authority, provided the primary data for financial analysis purposes. This chapter will first address the three research questions and then will look at other areas of interest that were discovered in the analysis process.

#### Research Questions

An exploratory approach to data analysis was employed in this research. The original research questions contained the phrase “model of fiscal viability.” As the author carefully examined each of the data sets and applied the five financial analysis tools introduced in the review of literature, it became apparent that this phrase, as used in this project, was not well-defined. The author, therefore, explored possible meanings of the phrase to determine which would best fit this project. The iterative analysis process itself revealed a *model for assessment* of financial position. Hence, this interpretation of “model” was used from that point forward.

For purposes of this chapter, the original research questions have been modified slightly to reflect the above definition. They will be presented here in their modified form. These slight modifications in wording, shown in italicized print, are made for clarity. The nature of the questions remains unchanged.

*Potential Use of Financial Analysis Tools in an LDC Setting*

The first research question addresses the potential use of financial analysis tools in an LDC school setting. The development of a model for financial assessment is explored. The question, as modified per the discussion above, is restated here.

Using business models for financial assessment, what analysis tools and financial ratios may be effectively applied to private secondary schools in Uganda in developing a model *for assessment* of fiscal viability?

As a precursor to actually applying financial analysis tools to the data, the author thoroughly examined the data for content and consistency. For contextual purposes, the survey data set was highly productive. For financial analysis purposes, the revenue reports yielded excellent data. Only 10 of the 59 UNEB schools had filed revenue reports and therefore could be included in this data set. The author recognizes that these 10 schools may or may not be representative of the population as a whole. Data was reformatted as necessary and preliminary calculations and descriptive statistics were run on selected contextual elements from the survey data set and financial data from the revenue reports.

Each of the five financial analysis tools presented in Chapter 2 was carefully considered within the context of the available data. The researcher found that all of the five tools could be effectively applied. Each tool examines the data for specific purposes as described previously. Together, they offer a comprehensive picture of the financial status of the school in a format that also provides a basis for relative comparisons with the performance and status of other schools in the sample and with newly calculated industry standards.

As exploratory research methodology is iterative, findings drive further analysis. The author recognized that the five analysis tools described in the literature review were not necessarily exhaustive of tools that could be helpful in assessing the financial health of secondary schools. A flexible model for assessment should allow for other tools, ratios, or financial comparisons to be made as dictated by the setting. Another financial variable, revenue per student, was created to assist in financial assessment. The author also found that the use of ranking was helpful. This simple comparative tool was applied wherever the financial analysis tools focused on relative position of the individual school.

This finding, that financial tools commonly used in business at large can also be effectively applied to secondary schools in an LDC setting, has immense implications. The traditional notion can be dispelled that in order to survive, schools must have guaranteed funding streams via government allocations or charitable donations. The schools in this study are businesses. They can and should benefit from good business practices, analysis methodologies, and assessment tools used in the business world. By proactively identifying and applying best business practices, these schools can strategize and realize success, both financially as well as academically.

Financial success and academic success are intertwined in the concept of fiscal viability. Schools cannot continue to operate indefinitely without adequate financial structures. However, without academic success, in this competitive marketplace where UNEB scores are published and students are free to shop for the best educational bargain, schools which do not attract students will eventually fail. A school's long-term fiscal viability, then, depends on both its ability to remain financially healthy and its ability to provide a quality education at a reasonable price to the consumer, the student.



The analysis tools identified for use in this LDC setting, when properly applied, can have considerable positive impact on a school's ability to maintain its financial health. Each of the analysis tools can assist school owners in identifying areas of financial concern and weakness. These financial red flags, if identified and acted upon in a timely manner, can enable a school to avert possible financial disaster.

Industry averages play an important role in financial analyses. Businesses—in this case private schools—are able to learn about their own financial status and condition by comparing prescribed financial statistics for their school against the averages for schools in their own market setting. This study presents key financial industry averages based on the 10 sample schools. These averages are likely to be more financially desirable (healthier) than the true averages of all secondary schools in the Mukono District. The lack of financial data for all secondary schools in the District precluded the calculations of true industry averages. The development of broad-based industry averages, based on consistent, reliable, verifiable financial data is a necessary condition for full financial analyses in this LDC setting. Future research should address the logistics of procuring usable financial data from all of the schools. This question must also be addressed: “What organization or governmental entity could or should use this data to calculate the industry averages and to provide this information to schools?”

This study has provided detailed descriptions of each of the financial analysis tools employed. Supplemental explanations have also been given to further acquaint the reader with basic business and accounting practices. These discussions are intended to lay a foundation such that the reader could use these analysis tools to assess the financial health of a single school or a group of schools. (See Appendix G for an example of a

single school analysis using the model for financial assessment identified in this paper.) The author has provided information to support both the theoretical basis of financial analyses and specific tools as well as their practical application.

Future research may seek the best way to assist schools in applying these financial analysis tools. An educational piece for school owners or managers may be appropriate. Possible delivery systems for training could be identified. Future research could also explore the role of government, trade associations, professional associations, independent consultants, or NGOs that focus on business development in assisting private schools to become more financially self-aware, assessment oriented, and fiscally viable.

#### *Model for Assessment of Financial Viability*

The second research question addresses the possible need for modifications to the five financial assessment tools. It is restated as follows:

What transformations or modifications to standard *tools* of financial assessment are required to build an appropriate model *for assessment* of fiscal viability *of* private secondary schools in an economically developing country?

The five analysis tools themselves did not require transformations or modifications. However, two areas of concern arose. First, in ratio analysis, some slight modifications in formulas were necessary to fit the research data. Financial practices in this LDC setting appear to be less sophisticated than corporate settings in which the formulas are most often applied. Modifications essentially were simplifications made to accommodate the available data. The essence and purpose of the formulas did not change. Second, the data itself limited the application of some financial analysis tools. In particular, the author anticipated that analysis of cash flow would be an important part

of this study. However, for the majority of the schools in this sample, there were no data available that could be used for cash flow analysis. Cash from operations, a key figure in cash flow analysis, was available for only 3 of the 10 schools. Therefore, cash flow analysis was not performed in this financial analysis. The analysis tools were in place; the data simply were not available to facilitate their full application.

Each of the five financial analysis tools employed in this research examines the data from a unique perspective. The model for assessment that emerged from this research uses all five analysis tools. This provides a broad-based, in-depth examination of the data. Some of the tools utilize data as re-formatted during the application of some other tool. For greatest efficiency and ease of calculation, the author suggests that the financial analysis tools be administered in the order set forth in Table 5.1.

From reliable financial data, ideally presented in balanced traditional financial statement format, individual school ratios must be calculated before a cross-sectional analysis can be undertaken. It is in the cross-sectional analysis that comparisons of financial ratios are made between an individual school and other schools or between an individual school and industry averages, if those figures are available. Ratios that differ greatly from averages suggest that further investigation may be necessary. Vertical analysis explores the relationships, as expressed in percentages, among components of each financial statement. The financial statements expressed in these percentages may then be compared with similarly prepared financial statements from other schools, if available. This comparison, known as common size statement analysis, may highlight

Table 5.1

*Model for Financial Assessment Using Business Analysis Tools*

Analysis Tool	Application
1. Ratio analysis of the individual schools	a. Calculate and study the results of the seven key ratios. b. Other financial ratios may be explored if necessary.
2. Cross-sectional analysis using the ratios of the individual schools	a. Compare ratios between schools. b. Industry average ratios may be calculated.
3. Vertical analysis of the individual schools	a. Calculate financial statement components' relative percentages. b. Investigate internal aberrations.
4. Common size statements	a. Common categories may be developed for financial statement summaries and comparisons with other schools. b. Industry average percentages may be calculated.
5. Horizontal analysis of individual schools	a. Calculate activity level changes between fiscal years. b. Investigate internal trends. c. Comparisons may be made between schools. d. Industry averages may be calculated.
6. Other financial analyses as dictated by the setting	

areas of significant difference and suggest further investigation. Horizontal analysis may be the most difficult tool to employ in an LDC setting such as this, because it requires financial data over several years. However, it may be the most useful in tracking and evaluating the effects of management policies, decisions, and practices.

A sixth category, “other financial analysis as dictated by the setting,” was added to this model. The model, therefore, can be dynamic and tailored to the specific needs of the LDC setting. There may be other items of financial interest and consideration which are unique to the setting, that are critical to the assessment of fiscal viability, but which are not captured in the five formal analyses. In this research one such item emerged, revenue per student.

In addition to the six named financial analysis tools, ranking may also be helpful in evaluating the overall financial position of a specific school. This analysis tool would be employed only if financial analysis is undertaken for multiple schools. Ranking establishes relative position among schools.

The author anticipates that ongoing research into the application of business tools in an LDC private school environment will lead to discovery of other financial measures of great meaning and benefit. The financial assessment model suggested in Table 5.1 lays a foundation for financial assessment of schools. It should be modified as needed to fit the circumstances and requirements of the individual educational setting.

This study is not expected to be an end-all. Rather, it is intended to initiate a continuing discussion concerning schools as businesses. Recognizing the business identity of these private schools opens doors of opportunity. The owners of these schools can benefit directly from the application of time-tested business practices. Ultimately,

students and society at large should also benefit from well-run, efficient schools that have as their focus both quality of financial standing and quality of education.

### *Financial Quality versus Educational Quality*

The third research question explores the possibility of linking financial measures to a measure of educational quality. This question is restated as follows:

Using quantitative analysis, is there an apparent link between *financial elements identified in this model for assessment* and the standard quality measurement of student performance, i.e. Uganda national examination scores (J. M. Hite, Hite et al., 2004b)?

Of the many financial elements identified, calculated, and studied in the application of this financial assessment model, eight were selected as broad spectrum indicators. The possibility of any relationship between these elements and UNEB scores was explored via one-tailed bivariate Pearson correlation analysis.

As reported in Chapter 4, only one direct correlation of significance emerged. UNEB scores positively correlates with the financial ratio Total Liabilities to Total Assets. This suggests that the higher the Total Liabilities to Total Assets ratio (indicating that the school is more highly leveraged), the higher the UNEB scores. While there is no obvious explanation for this relationship, at least three possibilities exist. First, the financing of assets through long-term debt appears to be the exception rather than the rule in this LDC setting; only 3 of the 10 schools have long-term debt. It could be that only those owners who are familiar with business and alternative methods of financing business (leverage) consider this option. These forward-thinking business minds may also be strategizing on how to achieve quality of education. Second, these schools may be

doing so well from a UNEB point of view that the owners have opted to expand through debt, confident that they can earn a high enough profit to repay the loans. Their confidence in their ability to perform makes them less risk averse. Third, this may be a Type I error, a false positive. Future research with a larger data set could explore this relationship more fully.

The author cautions the reader about the danger of misinterpreting the positive correlation between UNEB scores and the key ratio Total Liabilities to Total Assets. Correlation does not mean causation. It cannot be asserted that highly leveraging a school's assets could lead to higher UNEB scores. This interpretation could only lead to financial disaster.

There could be another positive correlation or link, although statistically immeasurable, between financial well-being and quality of education. It appears that the schools in this sample represent superior performance in both financial and academic spheres. One finding presented in Chapter 4 is that the mean UNEB score for the sample (10 schools) is significantly higher than the mean UNEB score for the population (59 UNEB schools). Indeed, 9 of the 10 sample schools are in the top 21 of 59 UNEB schools. No similar financial status comparison can be made between the sample and the population. Although revenue reports provided this financial data for the sample schools, there is no known consistent, reliable financial data for the population at large. However, the fact that these 10 schools are the only schools in the Mukono District to file revenue reports suggests that they are the 10 most financially successful schools.

It could be logically claimed that the sample group does represent the most financially successful and fiscally viable schools in the Mukono District. Only those

schools which have positive net income are required by the URA to file revenue reports. It is possible that the 49 schools that did not file revenue reports had no positive net income to report and were therefore not required to file the reports. This would verify the idea that the sample schools are indeed the most profitable, which could indicate that they enjoy the most secure financial status. This line of reasoning, unsupportable due to lack of adequate financial data for all 59 UNEB schools, suggests that there is a positive relationship between quality of financial status and quality of education.

#### Comments on Other Findings

Beyond the scope of the three research questions, there were other findings of interest that arose in the course of analysis. A discussion of these findings may help to guide future research.

This section addresses relationships between the 15 variables used in the correlation study. These include the previously identified seven key ratios, revenue per student, UNEB mean scores, and six contextual elements.

#### *Non-structural Correlations between Financial Variables*

As noted in Chapter 4, of the four significant correlations between key financial ratios, all were expected. They are all structural correlations. It is somewhat surprising that there were not any non-structural correlations. If, indeed, these seven key ratios capture the essence of financial well-being, there logically should be some non-structural correlations between these ratios. The relative lack of correlation between financial ratios may indicate that (a) there are no truly financially healthy schools in this sample, or that (b) there could be an omitted variable or some other measures of financial well-being that are as yet unrecognized. Further research is needed to explore these possibilities.



An additional financial element, revenue per student, was identified and used in the correlations. This element had a positive significant correlation with one of the financial ratios, Asset Mix, and is a non-structural correlation. This indicates that the more a school invests in fixed assets (as a proportion of total assets), the higher are its charges to students. Depending on the specific school, another explanation could be that with large proportions of assets, the school could generate other revenues in addition to student revenues. It could rent the facilities. The revenue figure used to calculate this financial element is total revenues, not just revenues generated from students. The total revenues figure was selected because some schools did not provide a breakdown in their revenues between student-related and non-student-related revenues. Future research could seek to isolate these components of revenue. It could also address the relationship between fixed assets and revenues generated.

#### *Highly Leveraged Female Schools*

Of all the correlations calculated between the final 15 variables in this study (seven key ratios, revenue per student, six contextual variables and UNEB scores), the variables that show the most significant and highest correlation are Percent of Females and the Long-term Liabilities to Equity, a measure of solvency: .959 at a .000 level. Not unexpectedly, the two leverage ratios which use total liabilities as their numerators also show significant correlations with percent of females in a school. These correlations mean that in the sample group, the higher the percentage of females in a school, the greater the likelihood that the school is highly leveraged. Simply put, the owners of female schools invest less proportionately because they work with borrowed funds.

At least two possible explanations may address this phenomenon. First, it could be that owners do not want to personally finance female education. While they must have some interest in female education, they may not want to risk losing their own investment should the school be unsuccessful. Second, the owners of female schools may not have the ability to finance the school through their own investment. They may have more interest in female education than they have the financial ability to make a large personal investment.

An investigation of the first possible explanation led the author to ask whether there is limited liability in Uganda. If so, an investor can be protected from personal liability should the business they invest in default on its business loans. If there is no limited liability, investors could be personally liable for debts of the business. While investors in developed nations may take limited liability legal status for granted, this may not be the case in an LDC. Preliminary inquiries about this legal situation indicate that there is no limited liability in Uganda for default on a school's loans (C. B. Mugimu, personal communication, June 22, 2006). If the school is not able to meet its debt obligations, the lender can not only take over the school, but has legal authority to attach the personal assets of the owners. This is, indeed, a great risk to owners of any highly leveraged business, not just female secondary schools.

The second possible explanation suggests that owners of female secondary schools may be substantially different from owners of other secondary schools. It may be that these owners have fewer personal assets because they themselves are female. Further research is necessary to ascertain (a) why female schools are more highly leveraged, and (b) the implications of this high leverage.

*Current Ratio, Size of Schools, Percent Boarding, and Age*

In the sample schools, there is a significant negative correlation between size of school and the financial variable, current ratio. This suggests that the larger the school, the lower is its relative working capital. In other words, the larger the school, the lower are its current assets in relation to its current liabilities.

There is a similar significant negative correlation between percentage of boarding students and the current ratio. The higher the percentage of boarding students at a school, the more likely the school is to have a poor current ratio position.

As might be expected, there is a significant positive correlation between size of school and percentage of boarding students. Tying these three variables together, the larger the school, the more likely it is to have boarding students and the less likely it is to have a healthy current ratio. A decreasing current ratio indicates that current assets (cash and other liquid assets) are not keeping pace with the increase in current liabilities.

This odd relationship between variables could be an indication of poor pricing policy and/or poor management of accounts receivable and cash. A decreasing current ratio indicates that current assets (primarily cash in this LDC setting) are not increasing as quickly as current liabilities (those amounts owed within the current fiscal year may include such items as utilities payable, the cost of food owed to vendors, etc.). It is possible that schools set their boarding prices not according to their actual costs, but in response to market demands—whatever the student is willing to pay. Schools likely have a stair-step cost “curve” rather than a smooth linear function cost curve. This is a reflection of the fact that total boarding school costs must include fixed as well as variable costs. Theoretically, the marginal cost of student number 901 in a 900 bed

facility would be significantly greater than the marginal cost of student 900. For student 901, a new dormitory may have to be built, representing a significant increase in fixed costs. However, the variable cost of student 901 would likely be very close, if not identical, to the variable cost of student 900. Understanding the cost structure of a school should have a direct impact on pricing for that school's services.

It is probable that large schools allow more students to attend without full, up-front payment of tuition, fees, and boarding costs. They also may have a more lax policy on collecting student accounts receivable. The school would still be incurring marginal costs such as increased food and utilities for these non-paying students. Eventually, if uncollectible, they would have to write off these accounts receivable. Or worse, the accounts receivable may never be *booked*—they may never be entered as accounts receivable on the balance sheet, yet the increased costs associated with those students would still appear on the income statement. Any unpaid costs (such as amounts owed to vendors for food) associated with these non-paying students would show up as current liabilities. This would therefore decrease the current ratio.

A decreased current ratio may also be indicative of poor cash flow. This data set did not contain sufficient data to assess cash flows. Future research should focus on the relationship between cash flows and other financial variables as well as to contextual variables.

The possibility exists that there is some other explanation for the relationship between size of schools and percent of boarding students and their negative correlations with the current ratio. There could be an omitted variable bias. Further research is

needed to examine pricing structure, student credit policies, and the specific effects of size and boarding status on current assets as well as current liabilities.

Another interesting, significant correlation with percent of students boarding is age of school. This negative correlation suggests that newer schools are likely to have a larger percentage of boarding students. It could be that if, as suggested above, boarding schools are more likely to be large, to have poorly conceived fees structures, and to extend credit to students, older schools have figured this out and have opted out of boarding status. The older schools represent survivors. Certainly in their years of existence, they have learned how to stay afloat. This age correlation coupled with the size, boarding status, and current ratio may suggest that the newer, larger boarding schools should pay particular attention to issues of liquidity before they become issues of viability. Further research should address this issue.

#### Implications of This Research

This research has several theoretical and practical implications. In the theoretical realm, the author found that common business analysis tools can be effectively applied to private secondary schools in an LDC setting with minor modifications. The financial analyses form the basis for assessment of financial status and fiscal viability of these schools. The limitations of this application are more closely related to availability and reliability of data than to the analysis tools themselves. Financial data to which these analysis tools can be applied, must be accessible, integral, reliable, consistent, and verifiable. In this particular research project, the author determined that one of the most valuable foci of financial assessment—analysis of cash flows—could not be addressed due to lack of appropriate data. In further research which may build on this project,

delimitations set by the author could be modified so that financial data of schools in a larger or different geographic region are studied, provided that quality financial data could be realistically obtained.

Many questions and issues are raised by this research. The following specific questions are suggested for future study.

1. How can financial data be collected for schools in the Mukono District of Uganda (or elsewhere) which have not filed revenue reports, i.e., what data collection methods or instruments could be developed to obtain reliable, consistent, and verifiable financial data from these schools?
2. What tracking methods or dynamic databases could be established such that horizontal analysis could be effectively applied to identify trends in individual schools and industry averages?
3. What laws or regulations in a specific LDC setting encourage, discourage, or impede private investment in education? What risks could be minimized through government or legal interventions?
4. What is the prevailing “mindset” of private school owners in a specific LDC setting? What practices are self-defeating or based on lack of information or understanding of business principles? What practices foster financial stability?
5. What measures could be taken to educate private school investors about financial assessment so that their schools can experience better financial stability and fiscal viability?
6. What role does cash flow play in the overall assessment of financial viability of private secondary schools in an LDC setting?

In addition, much could be learned from studying failed schools. A post-mortem financial analysis may inform the topic of fiscal viability in private schools run as businesses in an LDC setting. Currently there is no known way to access financial data from failed schools. Government collection of financial data on all schools, not just those which are required to file revenue reports, would be helpful in this regard.

This research also has practical implications. While all stakeholders stand to benefit from financially viable schools, two groups in particular could benefit directly from the findings of this research: schools and government.

Several areas of concern for schools were identified in the research findings. The following recommendations are made to private secondary schools in the Mukono District of Uganda. It is intended that these recommendations could assist in improving fiscal viability of these schools.

1. Private schools should be encouraged to keep complete and accurate accounting records. At the end of each fiscal year, formal financial statements should be prepared. These may be based on a format similar to the financial templates found in Appendix F-1 of this study. Preparation of a formal statement of cash flows is highly encouraged.
2. Financial analysis tools, as described and applied in this study, should be applied to the data contained in each school's financial statements.
3. Schools should examine their use of long-term debt. Over-leveraging without adequate liquid assets to meet debt obligations may render the school financially inoperable. Tracking changes in debt levels through horizontal analysis may be informative.

4. Schools should pay particular attention to their cash flow and to liquidity. Nine of the 10 schools in this example appear to have poor liquidity as manifest in their current ratio of less than 1.0.
5. Schools should examine their policies of extending credit to students as well as their successful collection of accounts receivable.
6. Schools should examine the amounts charged for tuition and fees. Fixed as well as variable costs and indirect as well as direct costs must be covered. For long-term fiscal viability, pricing must cover all expenses and still provide a positive and adequate return on the owners' capital investment.
7. Expenses should be analyzed using vertical analysis. Comparison with industry averages as well as horizontal analysis may highlight areas of concern.

The findings of this research may be helpful to governments. The following policy suggestions are made:

1. If the government has a social goal of providing greater access to education for girls, some assistance may be needed in the area of financing girls' education. The high correlation between percentage of females and long-term debt suggests that it may be very difficult to attract investor capital for girls' education. While the government may not have adequate cash to directly fund investment in girls' schools, other legal and financial incentives may be appropriate.
2. The apparent lack of limited liability for school owners may keep schools from using debt when it could be appropriate and helpful. Effective borrowing could assist schools in obtaining those resources that may be helpful in increasing the quality of education they provide.



3. The government could play a key role in encouraging fiscal viability of private schools. Analysis of financial data could help schools to become more fiscally viable. Industry averages, representative of the population (rather than only the sample used in this study), could be calculated for comparison if the government collected the appropriate financial data. This author suggests that data be collected in a template format similar to that found in Appendix F-1. This format requires internal balancing of the financial reports.

### Research Summary

This research project explored the application of financial assessment tools used in the business world at large to private secondary schools in an LDC setting. A model for financial assessment was identified. Specific ratios and financial measures were applied to financial data secured in the form of revenue reports from the Uganda Revenue Authority. Statistical analysis of the financial data, key contextual measures, and UNEB scores revealed several correlations of significance that merit further investigation. Suggestions have been made that (a) may assist schools in achieving greater fiscal viability, (b) encourage governments to set policies and collect financial data to assist researchers and all schools in assessing fiscal viability, and (c) direct future research.

### From Yellow Brick to Dirt Road:

#### Personal Reflections on this Research

It is with certain nostalgia, mixed with amusement at my naïveté, that I look back over this research journey. This project has been a blending of my past and present worlds. It has also provided tremendous learning opportunities and understanding of the research process unavailable in a classroom setting.

Renowned researchers and authors such as Kuhn and Phillips and Burbules describe research processes in terms of exploration, messiness, and learning opportunities (Kuhn, 1962; Phillips & Burbules, 2000). Often, the original intent of a research project dims in comparison to other unexpected discoveries along the journey.

The exploratory research undertaken in this project was, indeed, not tidy. The original intent of this project was to explore, on a micro-level in an LDC setting, what effect financial resources might have on student performance. Would a micro-level study confirm the findings of previous macro-level studies of similar focus? A thorough examination of the financial data collected in the Hite and Hite 2003 survey project revealed that while it could be extremely useful for contextual purposes, its deficiencies (as noted in Chapter 4) rendered it unreliable for sophisticated financial analysis.

Unwilling to abandon ship, the search was made for a data source more fit for financial analysis. One survey question regarding filing of revenue reports was promising, with 36 schools responding in the affirmative. Contacts were made to secure copies of these reports from the Uganda Revenue Authority.

Ultimately, however, the project seemed doomed when only 10 revenue reports were found. Then came the realization that these schools must constitute the most financially successful schools in the District! The requirement to file a revenue report is only incumbent upon those schools which earned a profit. These schools, then, must be the model schools for financial viability in the Mukono District. The project was redirected towards identifying methods of financial analysis that could be used in this LDC setting and using data from these 10 schools to develop a model for fiscal viability.

Challenges continued to arise, even with revenue report data (as discussed in Chapter 4). Dark days and long nights were spent wrestling with the data. However, with the challenges came learning opportunities. Perhaps the greatest lesson this author learned is that research, by nature, is messy. A close second is that good research requires vision, determination, and passion.

My dedicated and insightful mentor, Dr. Steven J. Hite, shared his views and experiences with dirty data and asked if I was willing to put on my hip boots and wade through the muck to mine for nuggets. Most likely, every researcher must have such a moment of reflection. Is the anticipated destination worth the difficulty of the journey?

In this reflective moment, my thoughts were drawn back to the people of Uganda who had become so dear to me. My mind's eye revealed Margaret and the 20-plus orphans she was single-handedly struggling to raise; Papa P, my host and landlord in Uganda, and his struggles not only to keep a large, private secondary school afloat, but to fund a girls' vocational school which he had built, but had no capital with which to commence operations; and Jasper, an entrepreneur who served as my chauffeur and confidant. Jasper startled me with his assertion that Uganda could never stand on its own feet until foreigners quit giving financial handouts—Ugandans must learn principles and practices that would allow them to stand on their own feet. Finally, thousands of young eager faces, as well as myriads of weary older ones, flooded my memory.

At this point the project took on a new focus and passion. Much as I might like to, I could not personally educate or finance the education of the next generation in Uganda. Perhaps my research could initiate a dialogue that could promote education and

influence schools to become more financially healthy, which would benefit students, families, and society in general.

Over the years, my business paradigm, based on prior professional experience as an accountant with CPA certification, a university financial administrator, and, finally, a full-time university faculty member teaching accounting for over a decade, had often conflicted with my educational paradigm. Furthermore, during much of the last decade I had been operating in a poverty alleviation paradigm as my children and I worked with NGOs in LDCs. Before me now was an opportunity to blend those paradigms in a synergistic manner to engage in research that ultimately could foster better financial health of schools in an LDC setting. The project took on new life and deeper meaning. With clearer vision and renewed vigor, the research came into sharper focus. The search was on to identify best business practices in financial analysis and tailor them to this LDC setting, then identify a model for assessment of financial viability and compare financial measures with quality measures.

At the conclusion of this research project, two outcomes are noteworthy. First, financial industry averages have been calculated for private secondary schools in the Mukono District of Uganda. Second, a model for financial analysis of private schools in an LDC setting has been identified. It is hoped that future research will continue this discussion.

### Conclusion

Education is critical to the development of strong, progressive nations. In recent years, UPE has spawned large increases in the number of students desiring secondary education in Uganda. Private secondary schools have been established to meet the excess

demand. Without dedicated inflows of resources, these schools must, as any other businesses throughout the world, become financially independent. Application of sound business practices, continuous monitoring, and use of specific financial analyses identified in this research have long assisted businesses in maintaining fiscal viability. Private schools in an LDC setting can similarly benefit.

This study has posed many questions. The findings suggest that continuing research and dialogue are needed. In no small measure, the future of Uganda, like other LDCs, rests upon the fiscal viability of its private schools. If these private schools fail, then with them goes the hope of a nation.

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APPENDIX A  
LIST OF ACRONYMS



## Appendix A

## List of Acronyms

BYU	Brigham Young University
EFA	Education for All
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
GPA	Grade Point Average
GPS	Global Positioning System
HIV/AIDS	Human Immuno-deficiency Virus and Acquired Immune Deficiency Syndrome
IAS	International Accounting Standards
ICPAU	Institute of Certified Accountants of Uganda
IRB	Institutional Review Board
IRS	Internal Revenue Service (US)
IVP	International Volunteers Program (BYU)
LDCs	Less Developed Countries (or Lesser Developed Countries or Least Developed Countries)
LRA	Lord's Resistance Army (Uganda)
MDGs	Millennium Development Goals
MOES	Ministry of Education and Sports (Uganda)
NGO	Non-government organization
PLE	Primary Leaving Examination (Uganda)
SEC	Securities and Exchange Commission (US)

UACE	Uganda Advanced Certificate of Education
UCE	Uganda Certificate of Education
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNEB	Uganda National Exam Board
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO/BREDA	United Nations Educational, Scientific and Cultural Organization /Regional Bureau for Education in Africa
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UPE	Universal Primary Education
URA	Uganda Revenue Authority
US	United States
WFP	World Food Program

APPENDIX B  
LETTERS AND INTRODUCTIONS





## APPENDIX B

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INSTITUTIONAL REVIEW BOARD  
FOR HUMAN SUBJECTS



May 5, 2003

Steven Hite  
306B MCKB  
Campus Mail

Dear Steven:

Thank you for your recent correspondence concerning your protocol entitled "Planning and Research in Internation Education: A GIS and Network Analysis in Government and Private Schools in Uganda." The research appears to pose minimal risk to human subjects and meets the Federal guidelines.

You are approved to begin your research. This approval is good for a maximum of one year, at which time, and sooner as need arises, the study will be reviewed again if the work is still in progress. Enclosed is a date stamped consent form. Please use this in obtaining consent. We will be sending a continuing review form before the expiration date. Please fill this form out in a timely manner to insure that there is not a lapse in your approval.

Please notify Nancy Davis, (801) 422-2970, A-261 ASB, of any changes made in the instruments, consent form, or research process before instigating the alterations, so that we can approve them.

If you have any questions, please let us know. We wish you well with your research!

Sincerely,

Dr. Shane S. Schulthies, Chair /  
Nancy A. Davis, CIM, Administrator  
Institutional Review Board for Human Subjects  
SSS/sgr

Enclosure



## Appendix B-2

**INFORMED CONSENT TO BE A RESEARCH SUBJECT**

March 5, 2003

**Site Resource Survey -- Mukono District, Uganda****PURPOSE OF THE STUDY:**

The purpose of this research study is to examine and assess the financial, physical, and human resources of schools in Mukono District in Uganda to build and test theoretical propositions regarding resources, school performance and educational planning. Dr. Steven J. Hite is Principal Investigator directing this study.

You were selected for participation because your school is in Mukono District, Uganda.

**PROCEDURES: Tour, Interview and Survey**

You will be asked to help two researchers facilitate the completion of a Site Resource Survey for your school. This survey may assess financial, physical and human resources, as well as external resources to which you may have access. You will first meeting with researchers for approximately 30 minutes to take a brief tour of your school and to plan the completion of the Site Resource Survey. The actual completion of the Survey may take the researchers up to two days, depending upon the size of your school. You will be asked to provide them access to measure, count or assess your resources. You may assign a member of your staff to help them in this process if you desire. Upon the completion of your participation, your school will receive a token of our appreciation for your participation.

**RISKS /DISCOMFORTS:**

There are no known physical risks associated with participating in this network study. Any fears regarding the confidentiality of your information are normal and will be respected. Potential organizational risks may be involved with the opportunity costs of your spending time in the interview session. Given the efforts that will be taken to maintain confidentiality (see below), no additional risks will be associated with this research.

**BENEFITS:**

This research will result in educational benefits—both scientific and social--for Ugandan education. Scientific benefits will include the discovery of themes, patterns and relationships between school resources, locations and relationships and the resulting performance of schools. Social benefits include improving Ugandan education, schools and school systems through better planning as well as resource and relationship management. In addition, this research will inform a broader educational audience about these relationships. If so you request, you may receive a copy of your own Site Resource Survey results for your records.

**CONFIDENTIALITY:**

Your identity and your responses will remain confidential and will not be revealed in published or unpublished results of this study. You will not be asked to divulge any information that you are uncomfortable sharing. The researcher team is under non-disclosure and confidentiality obligations. The information you share will be kept confidential. We will not share your information with other headmasters in Mukono District; thus, we will also not share their information with you. Every effort will be made to insure confidentiality for you, your staff and your school.

**WITHDRAWAL:**

Participation in this research is voluntary with no penalties for non-participation or withdrawal. You may refuse to answer any question during the survey. The researchers will not influence you to provide more information than that which you feel comfortable sharing. In addition, you may choose to withdraw from this study at any time.

**CONCERNS:**

If you have any concerns or questions at any time during this study, you may contact:

Principal Investigator, Dr. Steven J. Hite, Brigham Young University School of Education, Assistant Professor, Department of Educational Leadership and Foundations, USA Phone 801-422-3814, steve\_hite@byu.edu.

Research Field Director, Mr. W Joshua Rew, Brigham Young University, Uganda Address: PO Box 440, Mukono, Uganda, Uganda Phone Number: 077-835-488.

To discuss concerns that cannot be discussed directly with the principal investigator or your rights as a participant in research projects, you may contact Dr. Shane S. Schulthies, Chair of the Institutional Review Board, 120B, Brigham Young University, Provo, Utah 84602; phone, 801-422-5490; email shane\_schulthies@byu.edu..

I understand the procedures and my questions have been answered to my satisfaction. I have read, understood and received a copy of the above statement of Informed Consent and agree to participate in this study.

---

Participant's Name (printed) Participant's School (printed)

---

Participant's Signature Date

---

Researcher's Signature Date

Telegram: "EDUCATION"  
Telephone 234451/8



Ministry of Education & Sports  
Embassy House Building  
P.O. Box 7063  
Kampala, Uganda

In any correspondence on  
this subject please quote No. ADM/97/298/01 THE REPUBLIC OF UGANDA

23<sup>rd</sup> May 2003

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**RE : INTRODUCTORY LETTER.**

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This is to introduce to you a team of researchers that are conducting resource survey research in selected secondary schools in Uganda.

The study will benefit the policy making machinery of the Ministry of Education and Sports.

Your school is one of those that have been selected to be visited by the team.

Please render them the necessary assistance.

A handwritten signature in black ink, appearing to read 'Y.K. Nsubuga', written over a large, stylized circular flourish.

Y.K. Nsubuga  
For: **PERMANENT SECRETARY**





DEPARTMENT OF EDUCATIONAL  
LEADERSHIP AND FOUNDATIONS



1 May 2002

Dear Headmaster,

I want to thank you so very much for participating in the study of secondary schools in Mukono District, Uganda, sponsored by Brigham Young University in the United States. Without your valuable insights, this critical research regarding improving school resources for the benefit of children would be very difficult.

I appreciate your sharing with us about your school, its history and how you working so hard to be successful. Thank you again for sharing your time and thoughts to contribute to this important research. I wish you the very best of success as you continue in your work for the benefit of the children.

Sincerely,

Dr. Julie M. Hite  
Assistant Professor  
Brigham Young University  
306 MCKB  
Provo, UT 84602 USA

BRIGHAM YOUNG UNIVERSITY • 306 MCKB • PROVO, UTAH 84602  
(801) 422-2871 FAX: (801) 422-0380



APPENDIX C  
FOUR-PART SURVEY



## APPENDIX C

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## SECONDARY SCHOOL SITE SURVEY - 2003

### Personnel Survey (PART 1)

#### Administrator, Teacher and Staff Resources

---

*We appreciate your willingness to participate with Brigham Young University (U.S.A.) in conducting research addressing the role of resources in secondary schools in Uganda.*

*This School Site Survey is composed of three parts: PART 1: Consent Form and Personnel Survey  
PART 2: Headmaster Survey  
PART 3: Deputy Headmaster Survey*

*We would appreciate your help in completing PART 1 of this survey either before or after our scheduled appointment.*

---

### **SCHOOL INFORMATION: Please print your name and information about your school:**

School Name: \_\_\_\_\_

Interviewee Name: \_\_\_\_\_ Post: \_\_\_\_\_

\_\_\_\_\_

---

### **ADMINISTRATOR RESOURCES: Please tell us about the administrators at your school:**

\_\_\_\_\_ **How many administrators live at the school or have their accommodation funded by the school?**

1. What is the average salary (including all wages and allowances) for your administrators per month (UGS 000's)?
  - a. Below UGS 100
  - b. Between UGS 101-200
  - c. Between UGS 201-300
  - d. Between UGS 301-400
  - e. Between UGS 401-500
  - f. Between UGS 501-600
  - g. Between UGS 601-700
  - h. Between UGS 701-800
  - i. Between UGS 801-900
  - j. Between UGS 901-1,000
  - k. Above UGS 1,000 (one million)



## 2. Please list and describe your administrators:

	Administrator by first name	Title	Gender? M/F	Full/part time? F/P	Age Range: 1=20-30 2=31-40 3=41-50 4=51-60 5=Over 60	Total # of years at school?	# Years Admin experience at another school?	# of complete years of University?	Teaching or Admin Degree or Cert? Y/N	Participates in District Association?	Participates in District training?
Ex.	Frank	Clerk	M	F	2	4	2	4	Y	Y	Y
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

---

**STAFF RESOURCES:** Please tell us about your school's staff members (all functions except administrators and teachers).

3. \_\_\_\_\_ How many staff are employed by the school (not administrators or teachers)?
4. \_\_\_\_\_ How many full time staff members work at the school?
5. \_\_\_\_\_ How many part time staff members work at the school?
6. \_\_\_\_\_ How many staff members live at the school?
7. \_\_\_\_\_ How many staff members live elsewhere and have accommodation funded by the school?
8. \_\_\_\_\_ How many male staff members work at the school?
9. \_\_\_\_\_ How many female staff members work at the school?

10. What is the average salary for your staff members per month (in UGS 1,000's)?
- Below UGS 50
  - Between UGS 51-100
  - Between UGS 101-150
  - Between UGS 151-200
  - Over UGS 200

**TEACHER RESOURCES:** Please tell us about your teachers.

11. \_\_\_\_ How many teachers live off-campus and have accommodation funded by the school?
12. \_\_\_\_ How many of your teachers that live on campus also teach at other schools?
13. \_\_\_\_ How many of your teachers live at other schools yet teach subjects at your school?
14. \_\_\_\_ How many of your teachers are NOT certified?
15. \_\_\_\_ How many of the teachers also perform administrative duties?
16. \_\_\_\_ How many department heads do you have?
17. YES NO Are department heads paid extra?
18. How much extra money (UGS) are department heads paid?  
\_\_\_\_ UGS per \_\_\_\_\_ (specify month, term, etc.)
19. \_\_\_\_ How many teachers left (stopped teaching at) your school last year?
20. Of those teachers that left, how many found employment in the following sectors:  
a. \_\_\_\_ Private Schools b. \_\_\_\_ Government Schools c. \_\_\_\_ Private Sector d. \_\_\_\_ Other
21. For which subjects are teachers the hardest to find (list)?  
\_\_\_\_\_
22. Which subjects lose teachers the most (list)?  
\_\_\_\_\_
23. In this past year, have you paid your teachers' salaries:  
a. \_\_\_\_ Almost always late b. \_\_\_\_ Sometimes late c. \_\_\_\_ Usually on time d. \_\_\_\_  
Always on time
24. How much control do teachers generally have over instructional materials, curriculum and class time?  
a. \_\_\_\_ Very little control b. \_\_\_\_ Some control c. \_\_\_\_ Quite a bit of control d. \_\_\_\_ Total control
25. \_\_\_\_ How many of the teachers are examiners for UNEB exams?
26. \_\_\_\_ How many of the teachers are markers for the UNEB exams?
27. \_\_\_\_ How many examiners do you contract to help your candidates? How often?  
\_\_\_\_\_

28. \_\_\_\_\_ How many markers do you contract to mark your exams?
29. What is the average salary for your teachers per month (in UGS 1,000's)?
- Below UGS 100
  - Between UGS 101-200
  - Between UGS 201-300
  - Between UGS 301-400
  - Between UGS 401-500
  - Above UGS 500
30. \_\_\_\_\_ What is the average number of different subjects for each teacher?
31. \_\_\_\_\_ Lowest number for a teacher? \_\_\_\_\_ Highest number for a teacher?
32. Please describe the total number of teachers at your school (during the last term):  
 Subjects: M=Math H=History E=English B=Biology C=Chemistry  
 G=Geography W=Computers O=Other

#	Teacher by first name	Main Subjects (write in):	Full or part time? F/P	Gender? M/F	Age Range: 1=20-30 2=31-40 3=41=50 4=51-60	# yrs at school	Lives at your school?	# of subjects taught	Teach elsewhere?	Finding a replacement for this teacher would be:  1=Fairly easy 2=Somewhat difficult 3=Very difficult
Ex.	Frank	Math and Science	F	M	2	3	Y	2	Y	2
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										

#	Teacher by first name	Main Subjects (write in):	Full or part time? F/P	Gender? M/F	Age Range: 1=20-30 2=31-40 3=41=50 4=51-60	# yrs at school	Lives at your school?	# of subjects taught	Teach elsewhere?	Finding a replacement for this teacher would be:  1=Fairly easy 2=Somewhat difficult 3=Very difficult
Ex.	Frank	Math and Science	F	M	2	3	Y	2	Y	2
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
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41										
42										
43										
44										
45										
46										
47										
48										

#	Teacher by first name	Main Subjects (write in):	Full or part time? F/P	Gender? M/F	Age Range: 1=20-30 2=31-40 3=41-50 4=51-60	# yrs at school	Lives at your school?	# of subjects taught	Teach elsewhere?	Finding a replacement for this teacher would be:  1=Fairly easy 2=Somewhat difficult 3=Very difficult
Ex.	Frank	Math and Science	F	M	2	3	Y	2	Y	2
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										
60										
61										
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66										
67										
68										
69										
70										
71										
72										
73										
74										
75										
76										

**TEACHING RESOURCES:** Please describe the resources you have for teaching.34. Please describe the more *permanent* teaching resources in your school.

<b>Teaching Resources</b> (These resources are reusable.)  (Add additional teaching resources if they are not listed)	<b>Number (count)</b>	<b>Overall Condition</b> 1=Poor 2=Fair 3=Good 4=Very Good 5=Excellent	<b>How expensive is this resource?</b> 1=Not expensive 2=Slightly 3=Somewhat 4=Very 5=Extremely	<b>How important is this resource?</b> 1=Not important 2=Slightly 3=Somewhat 4=Very 5=Extremely
<i>Chalkboards</i>				
<i>Maps</i>				
<i>Wall charts</i>				
<i>Tables</i>				
<i>Student Desks (1 person)</i>				
<i>Student Desks (3 person)</i>				
<b>Textbooks</b>				
<i>Math</i>				
<i>English</i>				
<i>Geography</i>				
<i>Biology</i>				
<i>History</i>				
<i>Chemistry</i>				
<b>Laboratory Equipment</b>				
<i>Beakers</i>				
<i>Bunsen Burner</i>				
<i>Microscope</i>				
<i>Test Tubes</i>				
<i>Tripod Stands</i>				
<i>Conical Flasks</i>				
<i>Litmus Paper</i>				
<i>Masses</i>				

## Appendix C (continued)

***SECONDARY SCHOOL SITE SURVEY - 2003***

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**Headmaster Survey (PART 2)*****Financial and Administrative Resources***

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*We appreciate your willingness to participate with Brigham Young University (U.S.A.) in conducting research addressing the role of resources in secondary schools in Uganda.*

*This School Site Survey is composed of three parts: PART 1: Consent Form and Personnel Survey  
PART 2: Headmaster Survey  
PART 3: Deputy Headmaster Survey*

*We would appreciate your help and guidance in completing each of the three parts. As you are the Headmaster, we would be grateful if you would complete PART 1 before or after our scheduled appointment.*

*We would also appreciate being able to work with you and your Deputy Headmaster to complete PARTS 2 and 3 during our scheduled visit. If you would prefer to complete the entire survey yourself (PARTS 1-3), that would be fine. However, we are aware of your many important duties and may be able to obtain this information from your associates under your direction.*

*Before beginning the survey, please review PARTS 2 and 3, and determine how you would prefer to complete each part. If there are several researchers on site today, and if you so direct, they may be able to work with your Deputy Headmaster or additional school administrators to complete PARTS 2 and 3.*

---

**SCHOOL INFORMATION: Please print your name and information about your school:**Interviewee's Name: \_\_\_\_\_ Post:  
\_\_\_\_\_School: \_\_\_\_\_ Phone #:  
\_\_\_\_\_

Town/Trading Center/Village: \_\_\_\_\_

Year School Started: \_\_\_\_\_ School License #:  
\_\_\_\_\_Registration #: \_\_\_\_\_ UNEB #: \_\_\_\_\_ 1<sup>st</sup> Year of UNEB:  
\_\_\_\_\_

Mailing Address: \_\_\_\_\_ School Founder: SELF or  
 \_\_\_\_\_  
 \_\_\_\_\_ (circle) or (print  
 name)

---

**HEADMASTER: Please tell us about yourself:**

33. \_\_\_\_\_ In what year were you born?
34. *Female Male* Gender (please circle)
35. What is your university degree?  
 Type: \_\_\_\_\_ Field:  
 \_\_\_\_\_  
 University: \_\_\_\_\_ Date of Completion:  
 \_\_\_\_\_
36. \_\_\_\_\_ How many total years have you been in your current administrative post?
37. \_\_\_\_\_ How many total years have you worked as an administrator?
38. \_\_\_\_\_ How many total years have you taught in schools?
39. \_\_\_\_\_ In how many different schools have you worked (total for both teaching and administration)?
40. YES NO Are you a member of the Mukono Headmaster and Teacher Association?
- 

**STUDENT COMPOSITION: Please tell us about your students:**

41. \_\_\_\_\_ What is your total student enrollment? Of these students, how many are:  
 \_\_\_\_\_ Girls? \_\_\_\_\_ Boys?  
 \_\_\_\_\_ Boarding students? \_\_\_\_\_ Day students?
42. \_\_\_\_\_ How many new students applied to your school last year?
43. \_\_\_\_\_ How many total new students did you accept last year?
44. How many new students did you accept into each form this last year?  
 S1 \_\_\_\_\_ S2 \_\_\_\_\_ S3 \_\_\_\_\_ S4 \_\_\_\_\_ S5 \_\_\_\_\_ S6 \_\_\_\_\_
45. What percentage of your students are from village areas? \_\_\_ 0-25% \_\_\_ 26-50% \_\_\_ 51-75% \_\_\_ 76-100%
46. What percentage of your students are from urban areas? \_\_\_ 0-25% \_\_\_ 26-50% \_\_\_ 51-75% \_\_\_ 76-100%
47. What percentage of students are from *low-income* families? \_\_\_ 0-25% \_\_\_ 26-50% \_\_\_ 51-75% \_\_\_ 76-100%



48. What percentage of students are from *middle-income* families? \_\_\_ 0-25% \_\_\_ 26-50% \_\_\_ 51-75% \_\_\_ 76-100%
49. What percentage of students are from *high-income* families? \_\_\_ 0-25% \_\_\_ 26-50% \_\_\_ 51-75% \_\_\_ 76-100%
50. \_\_\_\_\_ What is the total enrollment of non-Ugandan students attending your school?
51. \_\_\_\_\_ How many different countries do your students come from (other than Uganda)?
- a. Please list the countries:
- \_\_\_\_\_
52. Estimate your total student population in the following school years:
- \_\_\_\_\_ 2000-2001      \_\_\_\_\_ 2001-2002      \_\_\_\_\_ 2002-2003.
53. \_\_\_\_\_ How many students left your school after finishing O-level exams last year?
54. \_\_\_\_\_ How many O-level students left your school last year due to drop out or transfer?
- a. For what reasons did O-level students leave your school last year (before completing exams)?
55. \_\_\_\_\_ How many students left your school after finishing A-level exams last year?
56. \_\_\_\_\_ How many A-level students left your school last year due to drop out or transfer?
- a. For what reasons did A-level students leave your school last year (before completing exams)?
57. **Tell us about seating students for national exams *LAST YEAR*:**

	O-Level	A-Level
<b>How many of your own students did your school seat for national exams last year?</b>		
<b>How many students from other schools did your school seat for national exams last year?</b>		
<b>How many students did you send to another school to sit for national exams last year?</b>		

**SCHOOL SERVICES, APPLICATIONS & FEES: Please tell us about your fees:**

58. If you have different fees for students, please indicate fees in the table below:

Classes	Day			Boarding		
	# of Students	Fees per Term	# students on any scholarship	# of Students	Fees per Term	# students on any scholarship
S-I						
S-II						
S-III						
S-IV						
S-V						
S-VI						

Last year:

59. \_\_\_\_\_ How many students paid full school fees in cash (including checks)?
60. \_\_\_\_\_ How many students supplemented or paid part of their school fees with in-kind labor or services?
61. \_\_\_\_\_ How many students paid school fees only with in-kind labor or services?
62. For students that pay part or all of their school fees with in-kind labor or services, how do you determine the value of labor or service in exchange for school fees?

**ADMINISTRATIVE RESOURCES: Please tell us about your administrative resources:**

63. \_\_\_\_\_ How many administrative office rooms does your school have?  
 64. \_\_\_\_\_ How many administrative desks does your school have?  
 65. \_\_\_\_\_ How many functioning administrative typewriters does your school have?  
 66. \_\_\_\_\_ How many functioning photocopy machines does your school have?  
 67. \_\_\_\_\_ How many functioning computers are in the administrative offices?

*(If they do not have computers, go to question 41.)*

68. \_\_\_\_\_ How many administrators use or know how to use computers?  
 69. YES NO Is the computer in a room that can be locked for security?  
 70. How many of these functioning computers were manufactured in the following time periods:  
 \_\_\_\_\_ Pre 1995    \_\_\_\_\_ 1995-1999    \_\_\_\_\_ 2000-present

71. How many of these functioning computers for administrators have the following:

\_\_\_\_\_ 3 1/2" drives  
 \_\_\_\_\_ Zip drives  
 \_\_\_\_\_ CD drives  
 \_\_\_\_\_ CD Burning Capability  
 \_\_\_\_\_ Internet connection  
 \_\_\_\_\_ Connected to working printer

72. How many of these functioning computers for administrators have the following software functions:

\_\_\_\_\_ Word Processing  
 \_\_\_\_\_ Spreadsheet  
 \_\_\_\_\_ Presentations or Slide Shows  
 \_\_\_\_\_ Database  
 \_\_\_\_\_ Games

**FINANCIAL RESOURCES:** Please describe your financial resources as of June 30, 2003:

73. Please estimate the amount of **TOTAL financial resources your school received last year (2002-2003) from all sources combined (circle one):**

- |                                |                                |                                |
|--------------------------------|--------------------------------|--------------------------------|
| a. None                        |                                | g. Between UGS 201-300 million |
| b. Less than UGS 25 million    |                                | h. Between UGS 301-400 million |
| c. Between UGS 25-50 million   | i. Between UGS 401-500 million |                                |
| d. Between UGS 50-75 million   | j. Between UGS 501-600 million |                                |
| e. Between UGS 75-100 million  | k. Between UGS 601-700 million |                                |
| f. Between UGS 100-200 million | l. Between UGS 701-800 million |                                |
|                                | m. Between UGS 801-900 million |                                |
|                                | n. Between UGS 901-999 million |                                |
|                                | o. More than UGS 1 billion     |                                |

74. Please describe the source of your school's financial resources last year. Please estimate in millions.

Source of Funding	Estimated the value received in UGS millions (last year, 2002-2003)
School Fees (cash)	
School Fees (in-kind)	
NGO Sources	
Government Sources- Capitation Grants	
Religious/Church Affiliation Sources	
Community Sources	
Students' Family Sources	
Other Donations (cash)	
Other Donations (in-kind)	
Gov't Capital Development Grants	
Gov't Bursary Scheme (Scholarships)	
TOTAL	

Please estimate the **TOTAL value of your school's financial resources** as of 30 June 2003 (circle one):

- |              |                     |                                |
|--------------|---------------------|--------------------------------|
| a. None      |                     |                                |
| b. Less than | UGS 25 million      |                                |
| c. Between   | UGS 25-50 million   |                                |
| d. Between   | UGS 50-75 million   |                                |
| e. Between   | UGS 75-100 million  |                                |
| f. Between   | UGS 100-200 million |                                |
| g. Between   | UGS 201-300 million |                                |
| h. Between   | UGS 301-400 million |                                |
|              |                     | i. Between UGS 400-500 million |
|              |                     | j. Between UGS 501-600 million |
|              |                     | k. Between UGS 601-700 million |
|              |                     | l. Between UGS 701-800 million |
|              |                     | m. Between UGS 801-900 million |
|              |                     | n. Between UGS 901-999 million |
|              |                     | o. More than UGS 1 billion     |

75. Please describe the composition of these financial resources by estimating, in millions, the value of each of the following financial resources as of June 2003.

Location of Financial Resources	Estimated Value in millions (as of 30 June 2003)
Bank Account (checking or savings)	
Other Cash Resources	
Resources, things or money that other people owe you	
Other:	
TOTAL	

76. Please estimate the value of your school's **TOTAL non-financial assets** as of 30 June 2003 (circle one):

- |              |                     |
|--------------|---------------------|
| a. None      |                     |
| b. Less than | UGS 25 million      |
| c. Between   | UGS 25-50 million   |
| d. Between   | UGS 50-75 million   |
| e. Between   | UGS 75-100 million  |
| f. Between   | UGS 100-200 million |
| g. Between   | UGS 201-300 million |
| h. Between   | UGS 301-400 million |
| i. Between   | UGS 400-500 million |
| j. Between   | UGS 501-600 million |
| k. Between   | UGS 601-700 million |
| l. Between   | UGS 701-800 million |
| m. Between   | UGS 801-900 million |
| n. Between   | UGS 901-999 million |
| o. More than | UGS 1 billion       |

77. Please estimate the value of the school's non-cash resources.

Non- Financial Resources	Estimated Value in millions (as of 30 June 2003)
School Land	
School Vehicles	
School Computers, Furniture & Equipment	
School Inventories & Supplies	
School Building Blocks	
School Animals	
TOTAL	

78. YES NO Did your school receive financial assistance from donors last year?  
(If no, go to question 52.)

79. \_\_\_\_\_ Approximately how many total donors contributed to your school last year (not including students' fees or in-kind payments)?

80. Please estimate the TOTAL value of future donations already promised or committed for your school next year – from all combined sources:

- a. None
- b. Less than UGS 25 million
- c. Between UGS 25-50 million
- d. Between UGS 50-75 million
- e. Between UGS 75-100 million
- f. Between UGS 100-200 million
- g. Between UGS 201-300 million
- h. Between UGS 301-400 million
- i. Between UGS 400-500 million
- j. Between UGS 501-600 million
- k. Between UGS 601-700 million
- l. Between UGS 701-800 million
- m. Between UGS 801-900 million
- n. Between UGS 901-999 million
- o. More than UGS 1 billion

81. Please rank up to four of the following as sources of past donations, from 1 to 4  
“1” = Most Valuable; “4” = Less Valuable. Source:
- \_\_\_\_\_ Community
  - \_\_\_\_\_ Religious or Church Organizations
  - \_\_\_\_\_ NGOs Organizations
  - \_\_\_\_\_ Students’ Families
  - \_\_\_\_\_ Government Sources
  - \_\_\_\_\_ Friends of Administrators & Teachers
  - \_\_\_\_\_ Other Organizations within Uganda
  - \_\_\_\_\_ Other Organizations outside of Uganda
82. Please rank up to four the following as potential sources of future donations, from 1 to 4 (“1” =  
Most Valuable; “4” = Less Valuable). Source:
- \_\_\_\_\_ Community
  - \_\_\_\_\_ Religious or Church Organizations
  - \_\_\_\_\_ NGOs Organizations
  - \_\_\_\_\_ Students’ Families
  - \_\_\_\_\_ Government Sources
  - \_\_\_\_\_ Friends of Administrators & Teachers
  - \_\_\_\_\_ Other Organizations within Uganda
  - \_\_\_\_\_ Other Organizations outside of Uganda
83. YES NO Did you file revenue reports last year with government, district or town assessors?
84. YES NO Does your school have past or current financial loans?  
(If no, go to question 59.)
85. Please estimate the TOTAL value of your school’s past financial loans cumulative up to 30 June 2003.
86. That is, how much have you borrowed since the school started AND fully repaid (circle one):
- Less than UGS 50 million
  - Between UGS 51-250 million
  - Between UGS 251- 500 million
  - Between UGS 501-750 million
  - Between UGS 751 million -1 billion
  - More than UGS Over 1 billion
87. Please describe the sources of these past financial loans (where you borrowed money or credit).

Financial Loan Sources	Estimated Cumulative Value in millions (Cumulative up to 30 June 2003)
<b>Banking Institution</b>	
<b>Friend</b>	
<b>Family</b>	
<b>Other Schools</b>	
<b>Community Association</b>	
<b>Other:</b>	
<b>TOTAL</b>	

88. Please estimate the **TOTAL** value of your school's current financial loans as of 30 June 2003. That is, how much have you borrowed that had not yet been repaid as of 30 June 2003 (circle one):
- Less than UGS 50 million
  - Between UGS 51-250 million
  - Between UGS 251- 500 million
  - Between UGS 501-750 million
  - Between UGS 751 million -1 billion
  - More than UGS Over 1 billion
89. Please describe the sources of these current financial loans (where you borrowed money or credit).

Financial Loan Sources	Estimated Value in millions (as of 30 June 2003)
<b>Banking Institution</b>	
<b>Friend</b>	
<b>Family</b>	
<b>Other Schools</b>	
<b>Community Association</b>	
<b>Other:</b>	
<b>TOTAL</b>	

90. **SKIP THIS QUESTION!** For later: Calculate the value of school's buildings & facilities using the Deputy Headmaster Survey and the Evaluation formulas from Uganda: \_\_\_\_\_
-



**OVERALL RESOURCES:**

91. Please describe your resources using the following questions and scale:

	SCALE:				
	1 Not	2 Sometimes not	3 Somewhat	4 Usually	5 Always
Resources	To what extent do you need more of this resource?	To what extent is this resource expensive?	How common is it for <i>your school</i> to share this resource with another school?	To what extent is this resource <i>important</i> to your school's successful performance?	
<i>Land</i>					
<i>Buildings</i>					
<i>Classrooms</i>					
<i>Vehicles</i>					
<i>Teaching Materials</i>					
<i>Textbooks</i>					
<i>Science equipment</i>					
<i>Science chemicals</i>					
<i>Food</i>					
<i>Water</i>					
<i>Electricity</i>					
<i>Repairs &amp; Maintenance</i>					

92. Which expenses took the largest proportion of your budget last year? Rank up to the top five (1 = Most, 5 = Least).

- a. \_\_\_\_\_ Land
- b. \_\_\_\_\_ Classrooms
- c. \_\_\_\_\_ Vehicles
- d. \_\_\_\_\_ Teaching Materials
- e. \_\_\_\_\_ Food
- f. \_\_\_\_\_ Water
- g. \_\_\_\_\_ Electricity
- h. \_\_\_\_\_ Teachers

- i. \_\_\_\_\_ Staff  
 j. \_\_\_\_\_ Administrators  
 k. \_\_\_\_\_ Exam Seats  
 l. \_\_\_\_\_ Other: (Rank only if identified)
- 

### **PARENT/SCHOOL BOARD RESOURCES:**

93. \_\_\_\_\_ Approximately how many parents/guardians are actively involved in school activities?
94. YES NO Do you have an active PTA in your school (circle)?  
 a. If YES, about how many parents/guardians are involved? \_\_\_\_\_
95. Please describe what types of activities parents/guardians are generally involved in (list):
- 
96. YES NO Is the headmaster an owner of the school?
97. YES NO Does the school have a school board?
98. \_\_\_\_\_ How many people serve on the School Board of Directors (or its equivalent)?
99. \_\_\_\_\_ How many of these people on the Board are employed at the school (as opposed to having their main employment elsewhere)?
100. Please tell us about your streams by class and subject:

Subject	S1-S4															
	# Streams				Average Stream Size (number of students)				# of Teachers				How many of these teachers are certified in the Subject			
Class →	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Math																
Geography																
Biology																
History																
English																

101. Please indicate your average stream size (number of students) & number of teachers (by subject):

		S5-S6							
Subject	# Streams		Average Stream Size (number of students)		# of Teachers		How many of these teachers are certified in the Subject		
	5	6	5	6	5	6	5	6	
Math									
Biology									
Chemistry									
Physics									
Agriculture									
Geography									
History									
English Literature									
Economics									
Divinity									
Fine Arts									
Home Economics									
General Paper									

## Appendix C (continued)

SECONDARY SCHOOL SITE SURVEY - 2003  
Deputy Headmaster Survey (PART 3)  
Physical and Educational Resources

**APPENDIX C (CONTINUED)****SECONDARY SCHOOL SITE SURVEY - 2003****Deputy Headmaster Survey (PART 3)****Physical and Educational Resources**

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*We appreciate your willingness to participate with Brigham Young University (U.S.A.) in conducting research addressing the role of resources in secondary schools in Uganda.*

*This School Site Survey is composed of three parts: PART 1: Consent Form and Personnel Survey*

*PART 2: Headmaster Survey*

*PART 3: Deputy Headmaster Survey*

*We would appreciate your help and guidance in completing PART 3 of this survey under the direction of your Headmaster.*

**SCHOOL INFORMATION: Please print your name and information about your school:**

School Name: \_\_\_\_\_

Interviewee Name: \_\_\_\_\_ Position: \_\_\_\_\_

**SCHOOL LAND: Please tell us about your school's land.**

2. What year was your land purchased or obtained? \_\_\_\_\_
3. What is the size of your school's property? \_\_\_\_\_ Acres
4. Please describe how you use the land owned by the school:

Is land used for (circle one):		Size of Space in Acres	List crops and animals raised and sports played	Is the land shared with other schools for these purposes?
Agriculture	YES or NO			
Husbandry	YES or NO			

Sports	YES or NO			
--------	-----------	--	--	--

5. How much of your land is currently undeveloped for school used? \_\_\_\_\_ Acres
6. Please describe the physical location and condition of your school land (check one in each category).
- a. **Useability:** \_\_\_\_\_ Mostly unuseable \_\_\_\_\_ Partially useable \_\_\_\_\_ Mostly useable
- b. **Wetlands:** \_\_\_\_\_ No wetlands \_\_\_\_\_ Some wetlands \_\_\_\_\_ All wetlands
- c. **Near Homes/Shops:** \_\_\_\_\_ Near few \_\_\_\_\_ Near some \_\_\_\_\_ Near many
- d. **Paved Roads:** \_\_\_\_\_ Next to the school \_\_\_\_\_ Some nearby \_\_\_\_\_ Only few nearby
- e. **Hilly or Flat:** \_\_\_\_\_ Flat \_\_\_\_\_ Somewhat Hilly \_\_\_\_\_ Very Hilly
- f. **Land Cleared:** \_\_\_\_\_ Only slightly \_\_\_\_\_ Quite a bit \_\_\_\_\_ All
- g. **Taxi access:** \_\_\_\_\_ Under 5 min. walk \_\_\_\_\_ 5-15 min walk \_\_\_\_\_ More than 15 minutes

7. Please describe the appearance of your school (check one in each category):
- a. **Walkways:** \_\_\_\_\_ Mostly tarmac \_\_\_\_\_ Partially tarmac \_\_\_\_\_ None tarmac
- b. **Front Gate:** \_\_\_\_\_ Locking \_\_\_\_\_ Gate, but not locking \_\_\_\_\_ No front gate
- c. **Security guard:** \_\_\_\_\_ Visible from front \_\_\_\_\_ On premises, not always visible \_\_\_\_\_ No security guard
- d. **Yard:** \_\_\_\_\_ Large grass area \_\_\_\_\_ Some grass area \_\_\_\_\_ No grass area
- e. **Fencing:** \_\_\_\_\_ Entire compound \_\_\_\_\_ Partial compound \_\_\_\_\_ No fencing
- f. **Physical Appearance:**

How often do parents comment *positively* on the physical appearance of your school?

1                      2                      3                      4                      5  
Rarely              Occasionally              Sometimes              Often              Very Often

**SCHOOL'S WATER: Please tell us about your school's water.**

8. Describe your school's source of water:

a. YES NO Is your water source on your property (circle one)?

b. \_\_\_\_\_ If no, how far away is the water source (in kilometers)?

c. How do you transport water (circle all that apply):

Gerry cans      Buckets      Pumps      Other (specify) \_\_\_\_\_

d. YES NO Do you have access to a well, a spring, or a bore hole?

e. YES NO Do you have tap water?

f. How do you store your water (circle all that apply):

Cistern      Tanks      Gerry cans      Buckets      Other (specify)

g. YES NO Do you have any system for capturing and storing rain water?

Please describe:

h. How do you purify your water (circle all that apply):

Boiling      Chemicals      No purification treatment

i. How would you rate the quality of your water before purification (circle one)?

1                      2                      3                      4                      5  
Poor                      Moderate                      Excellent

**SCHOOL'S FUEL SOURCES: Please tell us about your school's fuel sources.**

9. Describe your schools fuel sources:

	Which of the following fuel sources are used by your school (mark all that apply):	Please rank these sources in order of importance for your school (1=Most important):	What is the average cost of this fuel source for a month? (in UGS 000's)
Wood			
Petrol for Generator			

Petrol for Vehicles			
Natural Gas or Propane LP Gas			
Paraffin			

**SCHOOL'S ELECTRICITY/LIGHT: Please tell us about your school's resources for electricity and light.**

10. YES NO Is UEB your main supply of electricity (please circle)?
11. What does your average electricity bill cost for a month (UGS 000's)? \_\_\_\_\_
12. How much do you agree or disagree that the cost of electricity causes you to limit its use?
- |                   |   |       |   |                |
|-------------------|---|-------|---|----------------|
| 1                 | 2 | 3     | 4 | 5              |
| Strongly Disagree |   | Agree |   | Strongly Agree |
13. What alternative sources of electricity are available at the school (circle all that apply)?
- a. Gas generator   b. Batteries   c. Solar   d. Other (please describe)
- \_\_\_\_\_
14. How often are alternative sources of electricity used (circle one)?
- |                       |                      |
|-----------------------|----------------------|
| a. About once a day   | e. Every few months  |
| b. About once a week  | f. About once a year |
| c. Every few weeks    | g. Never             |
| d. About once a month |                      |
15. What alternative sources of light are available at the school (circle all that apply)?
- a. Candles   b. Torch   c. Paraffin Lamps   d. Other (please describe):
- \_\_\_\_\_

**HEALTH & SANITATION: Please tell us about your school's health and sanitation resources.**

16. YES NO Does the school have access to a nurse for students?
17. YES NO Is the nurse a member of the school staff?
18. YES NO Does the school have health clinic services available at the school?
19. YES NO Does the school have flushing toilets? \_\_\_\_\_ How many?
20. YES NO Does your school have separate pits/stances for girls & boys?
21. \_\_\_\_\_ How many stances (pits) does the school have?
22. \_\_\_\_\_ How many showers does the school have?
23. \_\_\_\_\_ How many wash areas (wash basin equivalents) does the school have?

**TRANSPORTATION: Please describe your school's transportation.**

23. YES NO Does the school own or have vehicles?

(If no, skip diagram and go to question 24.)

Describe each vehicle that the school owns (type, make, model)	Vehicle Descriptions			
	1	2	3	4
Year of Vehicle				
Estimate of annual kilometers used for school business				
How many days a month is this vehicle used?				
Number of people that can be transported at one time				
Square meters of space that could be used for hauling supplies, etc. (e.g. truck bed)?				
Who services this vehicle and where?				
How many times a year do you service this vehicle?				
Date of last maintenance				
Estimate of maintenance cost per year				

24. \_\_\_\_\_ How many vehicles are owned personally by school staff yet used for school purposes?

25. YES NO Do you hire vehicles from other persons, schools organizations?

26. How often does the school hire or borrow a vehicle (circle one)?

a. Daily   b. Once a week   c. Once a month   d. Every few months   e. Never

27. For what reasons do you hire or borrow vehicles?

a. \_\_\_\_\_

b. \_\_\_\_\_

28. \_\_\_\_\_ How many bicycles are owned by the school for school use?



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**COMMUNICATION: Please tell us about your school's communication equipment.**

29. \_\_\_\_\_ How many different telephone numbers does the school support (including mobile phones)?
30. \_\_\_\_\_ In addition to school phones, how many faculty or staff generally have mobile phones with them?
31. YES NO Does the school have a functioning FAX machine available?
32. YES NO Is a reliable internet connection available at the school for admin/faculty/staff use?
33. YES NO Does the school have an email address?

If the school has an email address and would share it with us, please list it here:

\_\_\_\_\_

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**EDUCATIONAL RESOURCES: Please tell us about your educational resources.**

34. Do you provide any of the following supplies for students?

- g. YES NO Exercise Books
- h. YES NO Writing Paper (other than exercise books)
- i. YES NO Pens

35. Please describe the teaching supplies that your school provides to the students or uses for teaching activities.

Teaching Supplies	On average, how often do you replenish your supplies? (weeks, months, or terms)	How expensive is this resource? 1=Not expensive 2=Slightly 3=Somewhat 4=Very 5=Extremely	How important is this resource? 1=Not important 2=Slightly 3=Somewhat 4=Very 5=Extremely
<i>Writing Paper (for teachers)</i>			
<i>Chalk</i>			
<i>Pencils &amp; Pens</i>			
<i>Science Chemicals</i>			
<i>Hydrochloric Acid</i>			
<i>Sulfuric Acid</i>			
<i>Nitric Acid</i>			
<i>NaOH hydroxide</i>			
<i>Copper Sulfate</i>			
<i>Zinc Metal</i>			
<i>Sodium Metal</i>			
<i>Benedict Solution</i>			
<i>Fehlings Solution</i>			

**COMPUTER RESOURCES:** Please tell us about your computer resources.

36. YES NO Do you have computers available for student use?

(If no, go to question 55.)

Please describe your school's involvement in computer training:

37. YES NO Do you offer formal computer training as a subject?

38. \_\_\_\_\_ Approximately what percentage of your students receive any computer training?

39. \_\_\_\_\_ How many teachers know how to use a computer?

40. \_\_\_\_\_ How many different teachers participate in teaching computer courses for students?
41. \_\_\_\_\_ How many teachers have received external computer training or certification of some type?

Please describe your school's computer resources that are available for student use:

42. \_\_\_\_\_ How many hours a week are computers available to *A-Level students* (in and out of class)?
43. \_\_\_\_\_ How many hours a week are computers available to *O-Level students* (in and out of class)?
44. \_\_\_\_\_ Do A-Level students use the computer to complete homework assignments?
45. \_\_\_\_\_ Do O-Level students use the computer to complete homework assignments?
46. \_\_\_\_\_ How many functioning printers does the school own?
47. \_\_\_\_\_ How many functioning computers do you have for student use?
48. YES NO Are all the student computers in one location?
49. YES NO Is the computer in a room that can be locked for security?
50. How many of these functioning computers were manufactured in the following time periods:  
 \_\_\_\_\_ Pre 1995    \_\_\_\_\_ 1995-1999    \_\_\_\_\_ 2000-present

51. How many of these functioning computers for students have the following:

- \_\_\_\_\_ 3 1/2" drives
- \_\_\_\_\_ Zip drives
- \_\_\_\_\_ CD drives
- \_\_\_\_\_ CD Burning Capability
- \_\_\_\_\_ Internet connection
- \_\_\_\_\_ Connecting to working printer

52. How many of these functioning computers for students have the following software functions:

- \_\_\_\_\_ Word Processing
- \_\_\_\_\_ Spreadsheet
- \_\_\_\_\_ Presentations or Slide Shows
- \_\_\_\_\_ Database
- \_\_\_\_\_ Games

**53. Please describe your school's computer supplies:**

<b>Computer Supplies</b>	<b>Number as of today (count)</b>	<b>How long will current inventory last? (months)</b>	<b>How expensive is this resource?</b> 1=Not expensive 2=Slightly 3=Somewhat 4=Very 5=Extremely	<b>How important is this resource?</b> 1=Not important 2=Slightly 3=Somewhat 4=Very 5=Extremely
<i>Printer Paper (# reams of 500 sheets)</i>				
<i>New 3 1/2" disks</i>				
<i>New Zip disks</i>				
<i>New CD-R's</i>				

**ATHLETIC RESOURCES:**

**54. Please describe the different athletic activities or sports supported by the school's facilities and equipment:**

	<b>Athletic/Sport Descriptions</b>			
<b>Name of Sport/Athletic Activity</b>				
Does the school have a team that competes with other schools in this sport? Y/N				
If teams, has the school received awards or honors in this sport? Y/N				
Activity for (B) boys, (G) girls or (BG) both?				
Athletic equipment available for this sport or activity (e.g. counts):				
<i>Balls</i>				
<i>Nets</i>				
<i>Hoops</i>				
<i>Goals</i>				
<i>Other:</i>				

	<b>Athletic/Sport Descriptions</b>			
<b>Name of Sport/Athletic Activity</b>				
Does the school have a team that competes with other schools in this sport? Y/N				
If teams, has the school received awards or honors in this sport? Y/N				
Activity for (B) boys, (G) girls or (BG) both?				
Athletic equipment available for this sport or activity (e.g. counts):				
<i>Balls</i>				
<i>Nets</i>				
<i>Hoops</i>				
<i>Goals</i>				
<i>Other:</i>				

### **VOCATIONAL RESOURCES:**

55. Please describe any vocational resources at your school.

<b>Vocational Activities</b> (add additional activities if they are not listed)	<b>Which activities are provided by your School? (check)</b>	<b>Which activities are available for your students through another school or partnership? (Check)</b>  <b>If yes, where?</b>	<b>List Resources that the School has to support these activities</b>
Agriculture	Y N		
Woodworking	Y N		
Sewing/Tailoring	Y N		
Metalworking	Y N		
Husbandry	Y N		
Computer Studies	Y N		(Already listed in this survey.)
Electrician	Y N		

**BUILDING BLOCKS: Please tell us about your school's buildings blocks.**

56. Please describe your school's buildings:

- a. \_\_\_ Number of separate building blocks in your school
- b. \_\_\_ Number of buildings blocks currently under construction
- c. \_\_\_ Number of buildings blocks planned but not yet under construction
- d. \_\_\_ Number of buildings blocks with doors?
- e. \_\_\_ Number of buildings blocks with glass in windows?
- f. \_\_\_ Number of buildings blocks with cement floors (or other covering)?
- g. \_\_\_ Number of buildings blocks with electricity?

57. How many of your building blocks have the following exterior finishes:

- a. \_\_\_ Brick
- b. \_\_\_ Stucco
- c. \_\_\_ Paint
- d. Other (Specify):

\_\_\_\_\_

58. Please describe how many of your building blocks have the following construction:

- a. \_\_\_ Brick (self made)
- b. \_\_\_ Brick (purchased)
- c. Wood
- d. Other (Specify): \_\_\_\_\_

59. How many classrooms for each grade level?

S1	S2	S3	S4	S5	S6

60. In the space below and if needed behind, please diagram your school's building blocks. Give each block a unique number and list the number of classrooms, administrative rooms, and laboratories each block contains.

(The researcher will measure these by "pacing them off" during the course of the interview.)

Name of Researcher Pacing: \_\_\_\_\_ Length of Pace:  
\_\_\_\_\_ inches

61. Please measure the following rooms and answer the questions in the table:

Size & Capacity of each of the following rooms:  <b>-Classrooms (S1-S6)</b> <b>-1 Dormitory (D1)</b> <b>-Science Laboratory (SL1)</b> <b>-Library (L1)</b> <b>-1 Administrative Room (A1)</b>  Size =( meters x meters, e.g. 6.21 x 4.25)  <i>Max Capacity</i> (only for classrooms & dorms) = # of persons seated or boarded)	Room	Size	Max Capacity
	S1		
	S2		
	S3		
	S4		
	S5		
	S6		
	D1		
	SL1		
	L1		
	A1		
Total Internal Size (sq. ft) Calculate from previous question (later)			
Type of Room	How many rooms does the school utilize for the following purposes?		
<i>Administrative</i>			
<i>Dormitory/ Student Boarding</i>			
<i>Library</i>			
<i>Food Prep/Storage</i>			
<i>Meeting Hall</i>			
<i>Computer Lab/Room</i>			
<i>Science Laboratory</i>			
<i>Faculty/Staff Area</i>			
<i>Faculty/Staff Boarding</i>			
<i>Husbandry</i>			
<i>Storage/ Tools</i>			
<i>Dining Area</i>			
<i>Garage</i>			
<i>Entertainment</i>			
<i>Health &amp; Medical</i>			
<i>Security</i>			
<i>Hall for National Exams</i>			

**LIBRARY RESOURCES: Please describe the books and library resources in your school.**

62. YES NO Do students read in the library (please circle)?

63. In what places do the students usually read?

64. (To be done by the research assistants) ---- Estimate "other" books available to the school that teachers, administrators or school students keep in their possession. *This is not book loans to other schools.*

Library Resources	School-owned Books in Library (estimate number of books in library)	School-owned Books with Teachers (estimate number held by teachers & NOT in library)	School-owned Books with Administrators (estimate number held by administrators & NOT in library)	School-owned Books with Students (estimate number held by school's students & NOT in library)
<b>Number of Books</b> (count)				
<b>Overall Condition of Books</b> 1=Poor 2=Fair 3=Good 4=Very Good 5=Excellent				

65. What are the copyright dates on 10 books?

**Random Check for Age of Books – Instructions for Research Assistants:**

Pick the 1<sup>st</sup> book on a shelf in the school's library. Write down the copyright year from the front pages into one of the boxes below. Go about 3 feet of books to the right and select a 2<sup>nd</sup> book. Continue through the shelves in a methodical, non-duplicating manner, until you have 10 books. If you run out of shelf space, begin again 1 foot to the right of your previous beginning point and go every 3 feet until you have 10 books.




## Appendix C (CONTINUED)

## SECONDARY SCHOOL SITE SURVEY – 2003

## Additional Information Resource Survey (PART 4)

*Student Intake, UNEB Exam, & Class/School Timetable Information*

**SCHOOL INFORMATION:** Please complete the following demographic information:

School Name: \_\_\_\_\_ Your Name: \_\_\_\_\_ Post: \_\_\_\_\_

Please tick one of the following school types: Government \_\_\_\_\_ Private \_\_\_\_\_  
Community \_\_\_\_\_

**STUDENT INTAKE INFORMATION:** Please describe the school's student intake for 1999-2002:

1. Please name up to five primary schools that send the largest number of primary students to your school:

a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

d. \_\_\_\_\_ e. \_\_\_\_\_

2. Please provide one of the following: either COPIES of the PLE and O-level exam admission scores for the students accepted to your school through the years 1999-2002 or INDICATE the mean PLE and O-level exam admission scores for the years 1999-2002:

a. 1999: \_\_\_\_\_ b. 2000: \_\_\_\_\_

c. 2001: \_\_\_\_\_ d. 2002: \_\_\_\_\_

PLE O-level PLE O-level

**UNEB EXAM INFORMATION:** Please provide information in reference to UNEB O/A-level exams:

3. Do other secondary schools send students to your school to sit for the UNEB O/A-level exams? Please circle: Yes or No

4. If yes, please name up to three secondary schools that send students to your school to sit for the UNEB O/A-level exams:

a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

5. Does your school send students to sit for the UNEB O/A-level exams at other secondary schools? Please circle: Yes or No

6. If yes, please name up to three secondary schools where your school sends students to sit for the UNEB O/A-level exams:

a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

**CLASS/SCHOOL TIMETABLE INFORMATION:** Please describe the class timetable for the school.

7. Please indicate the amount of time allocated to the following areas:

a. Minutes per Lesson \_\_\_\_\_

b. Time per Chemistry Practical: \_\_\_\_\_ (hours per week)

c. Time per Biology Practical: \_\_\_\_\_ (hours per week)

d. Time per Physics Practical: \_\_\_\_\_ (hour per week)

8. Please indicate how often science practicals are conducted per week:

a. Chemistry: \_\_\_\_\_ b. Biology: \_\_\_\_\_ c. Physics: \_\_\_\_\_

9. Please indicate how many hours per week your students spend in the library:

10. Please indicate how often parent teacher association meetings take place: Please circle one of the following:

a. weekly b. monthly c. once each term d. once each year e. never f. other:

\_\_\_\_\_

## APPENDIX D

## FORMULAS FOR BUSINESS RATIO ANALYSIS BY GROUPING



## APPENDIX D

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## Appendix D

### Formulas for Business Ratio Analysis by Grouping

#### *Introduction*

Financial statement ratio analysis has grown in the corporate world to near global acceptance and application. Hundreds of ratios are used, some almost universally and some only for specific applications, along a broad spectrum of analyses purposes. The author has limited the coverage here to those ratios are more likely to be appropriate to this research.

The following three criteria have been used as filters in limiting the number of ratios considered for this project. These filters serve as logical restrictions to seemingly innumerable possibilities.

1. The ratio is widely used and generally recognized.
2. The ratio is appropriate for use in a setting with private individual or partnership ownership, rather than public corporate ownership. All ratios pertaining to areas of concern to common corporate shareholders such as earnings per share (EPS), dividend payouts, or price/earnings ratios (P/E ratios) have not been included.
3. The ratio is appropriate to a service industry. The many common ratios applied to manufacturing, wholesaling or retailing firms are not included. These excluded ratios primarily focus on inventories which are produced or held for resale. Any inventories found on the balance sheets of service industries are incidental rather than primary components in asset value or determination of income from the operations of the organization.

Ratios which meet the above criteria were grouped into seven categories which have been identified as relevant to this study. The groups are presented here with a brief explanation of each (as provided in Chapter 2, but slightly expanded here).

With literally millions of users of financial analysis ratios, it is not surprising that alternative names have evolved for ratios and varying nuances on formulas used in calculating the ratios. An effort has been made to identify those ratios, names, and formulas most commonly used, with particular emphasis on academic textbook presentation, management/controllership sources, and actual industry benchmarking services.

Some ratios are known by more than one name. In such cases, an effort has been made to provide each of the common names for the ratio in question. In other cases, there may be alternative formulas for a given ratio name. In such cases, alternative ratios are presented. An effort has been made to consolidate and simplify presentation of the ratios and their formulas. The use, meaning, or significance of each ratio is also presented to give the reader some sense of its importance.

Parenthetical letters following an entry refer the reader to sources where further coverage on that particular ratio may be found. A key to these sources is given at the conclusion of the ratio presentation. Full citations for these sources may be found under “References” at the conclusion of this Appendix.

Ratios are presented here in the same order and groupings as seen in Chapter 2 of this document. This appendix is provided as detailed supplemental material to support and deepen the literature review on financial ratios.

It is anticipated that in the analysis stage, the following information will be provided for each ratio employed in the analysis. [Note: an illustration of this presentation was given

in Chapter 3, Research Question #2, for the current ratio, a ratio commonly associated with liquidity.]

Name of ratio grouping

Intent or function of this ratio grouping

Name of specific ratio

Formula for this ratio

Where the data for this ratio is found in the database

Use of this ratio

Meaning/Interpretation of the ratio

Expected range of the ratio

Appropriateness of this ratio in LDC setting

It is acknowledged that the relatively few ratios presented here may still be overwhelming to the uninitiated reader. The author notes that in the analysis of Research Question #1, an effort will be made to identify those few (perhaps 2 to 4) ratios in each ratio category which (a) may best capture the essence of the category, and (b) can be calculated given the data available.

#### *Ratio Groups and Formulas*

Ratios are presented here in the same groupings as introduced in Chapter 2. Each grouping is discussed in greater depth. Formulas are given for those specific ratios within the grouping that may be most helpful in this analysis.

#### *Profitability Ratios*

This group of ratios focuses on those components that affect the organization's income or success in operations for a given period of time (Weygandt et al., 1999).



Profitability provides a measure of a company's operating success (King, Lembke, & Smith, 2001).

It is noted that profitability ratios traditionally analyze income as compared to some other factor. Income is largely a function of revenue and expense figures based on accrual concepts of accounting (White). That is, income is calculated as the difference between revenues earned (not necessarily collected) and expenses incurred (but not necessarily paid for) in generating those revenues. This accrual-based perspective may provide a very different picture of income than a cash-based perspective.

Profitability may be viewed as "the ease with which a company generates income" (Jones et al., 2000, F455). While it is imperative that a company experience profitability in order to continue its operations into the foreseen future (the business concept known as *going concern* (Maurer et al., 1995), profitability is not the only factor of importance. Again quoting Jones, "A preoccupation with short-term profits is detrimental to the long-term value of a business!" (Jones et al., 2000, F455).

Profitability ratios are presented in Table D.1. The formulas and significance for each profitability ratio are also presented.

### *Efficiency Ratios*

These ratios show how efficiently assets and equity are being utilized. These are also commonly referred to as *turnover ratios* (B. Lev, 1974), *activity ratios* (White et al., 1998) or *operations or operating ratios* (Albrecht et al., 2005; Stice et al., 2004; Viscione, 1983).

These ratios are helpful in evaluating management performance (RMA, 2003-2004) and policies. The emphasis here is on operational efficiency (B. Lev, 1974).

Table D.1

*Profitability Ratios*

Ratio	Formula	Significance
Percent Return on Net Sales	Net Profit / Net Sales Revenue	Measure of share of sales turned into profit (RA)
or	or	
Profit Margin	Net Income / Sales	
Gross Profit to Net Sales	Gross Profit / Net Sales Revenue	Measures gross margin as a proportion of net sales (RA)
Break Even Point (BEP)	Total Operating Expenses / Average Gross Margin Percentage	Shows exact sales level at which a company covers all costs but makes no profit (RA)
Margin of Safety	(Current Sales level – BEP / Current Sales Level	Indicates amount by which sales can drop before BEP (RA)
Ratio of Administrative Expenses to Sales	Total General and Administrative Expenses / Gross Sales	Shows level of administrative overhead required to maintain a particular level of sales (RA)
Return on Equity	Net Income / Average Stockholders' Equity	Measures profitability relative to owners' investment (W)

Efficiency ratios are presented in Table D.2. The formulas and significance for each efficiency ratio are also presented.

*Liquidity Ratios*

These ratios focus on the organization's ability to meet its short-term obligations which may include short-term formal debt such as notes payable, credit obligations that may

Table D.2

*Efficiency Ratios*

Ratio	Formula	Significance
Return on Total Assets	$(\text{Net Income} + (\text{Interest Expense} \times (1 - \text{tax rate}))) / \text{Average Total Assets}$	Measure of how well the assets have been employed by management (G)
or	or	or
Return on Assets (ROA)	$(\text{Net Income} + \text{After-tax Interest Cost}) / \text{Average Total Assets}$	measures management's ability and efficiency in using the firm's assets to generate operating profits (W)
or	or	
ROA	$\text{EBIT} / \text{Ave. Tot Assets}$	
Total Asset Turnover	$\text{Sales} / \text{Total Average Assets}$	Measure of overall investment efficiency (W)
Fixed Assets Turnover	$\text{Sales} / \text{Ave. Fixed Assets}$	Measure of efficiency of LT capital investment (W)
Average Collection Period (Age of Receivables)	$365 \text{ days} / \text{Accounts Receivable Turnover}$	Measure of the average number of days taken to collect an Account Receivable (G)
or	or	
Ave collection period	$\text{Ave AR} / \text{Ave Cr sales per day}$	
Payables Turnover	$\text{Total Purchases} / \text{Ending Accounts Payable Balance (RA)}$	Shows how rapidly the company is paying its obligations (stretched too far or taking all possible discounts for early payment?) (RA)
or	or	
Days AP Outstanding (R)	$365 / \text{AP Turnover}$	Shows in number of days the rapidity with which ST obligations are met
or		
Average Number Days Payables Outstanding (W)		
Ratio of Depreciation to Fixed Assets	$\text{Total Accumulated Depreciation} / \text{Total Gross Fixed Assets}$	Rough check on adequacy of depreciation policy (RA)
Working Capital Turnover	$\text{Sales} / \text{Average Working Capital}$	Summary ratio that reflects amount of working capital needed to sustain a given level of sales (W)

arise from daily operations, or any debt that will mature in the next operating cycle (Gates, 1993). As RMA, an industry benchmarking giant, explains: “Liquidity is a measure of the quality and adequacy of current assets to meet current obligations as they come due” (RMA, 2003-2004, p. 12). Liquidity ratios are presented in Table D.3. The formulas and significance for each liquidity ratio are also presented.

Table D.3

<i>Liquidity Ratios</i>		
Ratio	Formula	Significance
Current Ratio or Working Capital Ratio (W)	Current Assets / Current Liabilities	Test of short-term debt-paying ability (G)
Quick (Acid Test) Ratio	(Cash + Marketable Securities + Current Receivables) / Current Liabilities	Test of short-term debt-paying ability without having to rely on inventory (G)
Working Capital (not a ratio, but is a measure of liquidity and is used in other ratios in other groupings)	Current Assets - Current Liabilities	Measures the company's ability to repay Current Liabilities using only Current Assets (G)
Cash Ratio	(Cash + Short-Term Securities) / Current Liabilities	Most conservative measure of company's ability to pay off short-term liabilities (RA)
or	or	or
Cash Ratio	(Cash+ Marketable Securities / Current Liab's	(W)
Defensive Interval	365 X (Cash + Marketable Securities + Accounts Receivable) / Projected Expenditures	Provides intuitive feel for a company's liquidity; compares the quickly available sources of cash with the expected expenditures (R)

### *Solvency Ratios*

This group of ratios focuses on the organization's ability to meet its long-term debt obligations. This relates to the company's long-term survivability (Weygandt et al., 1999).

The seriousness of the issue of solvency is summed up by White: "...the priority of interest and debt claims can have a severe negative impact on a firm when adversity strikes. The inability to meet these obligations can lead to default and possible bankruptcy" (White et al., 1998, p. 161).

Solvency ratios are presented in Table D.4. The formulas and significance for each solvency ratio are also presented.

Table D.4

<i>Solvency Ratios</i>		
Ratio	Formula	Significance
Long-Term Debt to Equity	Total Long-Term Debt / Total Owners' Equity	Expression of the company's capitalization; excessive debt may indicate potential insolvency (RA)
Long-Term Debt to Assets	LT Debt / Total Assets	Shows the portion of assets financed by LT Debt (R)
Long-Term Debt to Tangible Assets	LT Debt / Total tangible Assets	Shows the portion of tangible assets as related LT Debt (R)
Capital Expenditure Ratio	Cash from Operations (CFO) / Capital Expenditures	Measures ability to finance the replacement and expansion of company's investment in productive capacity (W)
CFO to Debt Ratio	CFO / Total Debit	Shows generation of cash for debt repayment (W)

### *Leverage Ratios*

This group of ratios examines the organization's debt structure. It addresses the use of debt to leverage its productive assets (Albrecht et al., 2005) or compares debt to net worth. Organizations that are heavily leveraged (meaning they have high debt in relationship to net worth) may face greater vulnerability during business downturns (RMA, 2003-2004).

The concept of financial leverage asserts that leverage (debt) may be effectively and safely used as a means to finance assets and growth (i.e., positive financial leverage exists) as long as the returns to the organization's owners (rate of return on equity) exceed the cost of the debt (rate of return the company must pay its creditors) (Garrison et al., 2006). This is a measure of "risk and return trade-off" (White et al., 1998).

It may appear that there is some overlap or close correspondence between the ratio categories of leverage and solvency. Indeed, they are closely related and utilize some of the same components in their calculations. Both are attempts to pinpoint areas of potential risk. Yet they address slightly different issues. Solvency focuses on an organization's long-term ability to meet its obligations. Leverage concentrates on the use the company is making of the long-term debt it has incurred.

Leverage ratios are presented in Table D.5. The formulas and significance for each leverage ratio are also presented.

### *Cash Flow Ratios*

This group of ratios highlights the necessity of efficient cash management (Schaeffer, 2002). Relatively recent in its development and use, it is subdivided into sufficiency ratios (addressing the cash flow needs of the entity) and efficiency ratios (measurements of how cash is generated) (Roehl-Anderson & Bragg, 2005).

Table D.5

<i>Leverage Ratios</i>		
Ratio	Formula	Significance
Total Liabilities to Total Assets	Total Liabilities / Total Assets (W)	Shows the relationship between total assets and total liabilities, a measure of leverage in financing assets
Debt to Equity	Total Debt/ Total Equity (W)	Shows the relationship directly of debt to equity
Debt to Equity Turnover	Total Liabilities / Stockholders' Equity	Measure of the amount of assets being provided by creditors for each dollar of assets being provided by the stockholders (G)
Debt to Total Capital	Total Debt (Current + Long-Term) / Total Capital (Owner's Contributions + Retained Earnings)	Measure of risk relating to financing (W)

Cash sufficiency ratios are presented in Table D.6. Cash efficiency ratios are presented in Table D.7. The formulas and significance for each of these cash flow ratios are also presented in their respective tables.

#### *Other Indicators*

In a catch-all category, some financial statement users suggest that there are other ratios that may be helpful in financial analysis (Fridson, 1996; Stice et al., 2004).

- a. Interest coverage ratios. These ratios are closely related to liquidity yet are not appropriately included in that category of ratios. Interest coverage ratios are seen as useful in directly addressing the organization's ability to meet interest payments (White et al., 1998). Interest may be a major component of current liabilities (a key component in liquidity measures). Interest expenses may be incurred as a result of

Table D.6

<i>Cash Flow Sufficiency Ratios</i>		
Ratio	Formula	Significance
Cash Flow Adequacy	Cash from Operations / (Long-Term Debt Paid + Funds from Assets Purchased + Dividends Paid)	Measures company's ability to generate sufficient cash to pay its debts, reinvest in its operations and pay dividends to its owners (RA)
Long-Term Debt Repayment	Long-Term Debt Payments / Cash from Operations	Measures sufficiency of cash to cover long-term debt obligations (RA)
Debt Coverage	Total Debt / Cash from Operations	Reflects how many years, at the current level of cash generation, are needed to retire all existing debt (RA)
Cash to Working Capital	(Cash + Short-Term Marketable Securities) / (Current Assets – Current Liabilities)	Shows proportion of working capital that can be quickly converted to cash to meet obligations (RA)

Table D.7

<i>Cash Flow Efficiency Ratios</i>		
Ratio	Formula	Significance
Cash Flow to Sales	Cash Flow from Operations / Sales	Percentage of sales realized in cash (RA)
Cash Flow Return on Assets	Cash Flow from Operations / Total Assets	Relative amount of cash generated by assets (RA)
Cash Flow from Operations	Cash Flow from Operations/Current Liabilities	Measures liquidity by comparing actual cash flows with current liabilities (R)
Fixed Charge Coverage Ratio (Cash Basis)	Adjusted Operating Cash Flow / Fixed Charges	Compares cash from operations with fixed charges (W)
Times Interest Earned (Cash Basis)	Adjusted Operating Cash Flow / Interest Expense	Addresses interest coverage from operating cash (W)



management policy or practice regarding short-term debt, such as paying or not paying accounts payable within the no-interest period allowed. Interest obligations may also be incurred as they relate to long-term debt. Debt ratios assist in understanding of financial structure of an organization, but provide “no information about its ability to generate a stream of inflows sufficient to make principal and interest payments. One financial ratio commonly used for this purpose is the interest coverage ratio” (Revsine et al., 2002, p. 162). Similar ratios, but prepared with a cash emphasis, are presented in the Cash Flows ratio group. The interest coverage ratios, along with their formulas and significance, are presented in Table D.8.

- b. Asset Mix Ratio. This ratio is not as widely used as others, but may be a critical factor in the setting of this research. It looks at asset composition (Stice et al., 2004) and may relate to the issue of efficient use of assets. The asset mix ratio, its formula, and significance are presented in Table D.9.

Table D.8

<i>Interest Coverage Ratios</i>		
Ratio	Formula	Significance
Times Interest Earned	Earnings Before Interest & Taxes (EBIT) / Interest Expense	Measures the extent to which earnings are available to cover interest expense (W, G)
Fixed Charge Coverage	Earnings Before Fixed Charges and Taxes / Fixed Charges	A more comprehensive measure including all fixed charges (W)

Table D.9

<i>Asset Mix Ratio</i>		
Ratio	Formula	Significance
Asset Mix Ratio	Buildings and Equipment / Total Assets	Measures the portion of assets tied up in fixed assets (S)

- c. Other ratios to be determined through analysis. It is possible that in the analysis stage, other factors or indicators may emerge that appear to be relevant and necessary to include in ratio analysis. One area of possible development, unseen in the literature but that may be of use and closely ties to the aforementioned asset mix ratio, could be ratios that further explore asset composition.

#### *Summary*

Ratios presented in this appendix are those that appear to be good possibilities for use in addressing the research questions as identified in this project. The analysis stage of the project will seek to further refine and distill the ratios that may be appropriately applied to secondary schools in the Mukono District of Uganda in assessing fiscal viability.

#### *Key to Sources Cited in Ratio Formulas*

G = Gates

R = Revsine

RA = Roehl-Anderson

S = Stice

W = White



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APPENDIX E

SAMPLE EXCEL DATABASE SPREADSHEET



## Appendix E

## Sample Excel Database Spreadsheet

analysno	Sch_ID	TotFR02	TotSFC02	TotSFI02	TotRNG02	TotRGG02
1	S0057	2	1.5	0.5	0	0
2	S0105	2	2.6	0.2	0	0
3	S0106	2	20	5	0	0
4	S0108	3	36	0.04	1.38	0
5	S0113	7	246	4.24	0	5.4
6	S0138	3	43	2	0	0
7	S0139	3	15	1.5	0	6.96
8	S0140	5	92.793	3.776	0	0
9	S0143	3	19.767	0	0	11.76392
10	S0146	2	1.684	0.112	0	0
11	S0147	2	14	0.9	0.68	0
12	S0148	7	259.2	0	0	0
14	S1004	10	297	0	0	18
15	S1005	7	204.537	6.8365	0	0
16	S1007	3	35	3	0	0
17	S1008	5	30	0.3	0	0
18	S1010	4	52	10	0	0
20	S1013	5	80	1	0	0
21	S1014	14	900	7	0	0
22	S1015	7	250	0	0	0
23	S1016	3	30	2	0	0
24	S1017	6	35	0	0	0
28	S1029	0	0	0	0	0
29	S1050	6	100	0	500	15
31	S1052	3	30.5	0.5	0	8.4
33	S1095	4	38	7	0	0
34	S1096	14	800	0	0	0
35	S2011	2	99999	10	0	0
38	S2025	5	31	0	0	53
40	S2027	7	191	0	10	0
41	S2031	4	15.1622	1	0	35.89852
42	S2040	6	17.7974	0.14	0	15.372
45	S2054	7	200	0	0	0
47	S3039	4	10	0.5	0	3.9
48	S3047	2	10	0.3	0	0
49	S3063	13	662.6767	0	0	181
50	S3064	6	180	16	0	0
51	S3065	2	17	0.2	0	0





APPENDIX F  
FINDINGS



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## Appendix F-1

## Template for Financial Statements

Financial Statement	Corresponding Question in survey database
<b>I. Balance Sheet</b>	
(format: Assets = Liabilities + Equities)	
<b>Assets</b>	
Current Assets	
Cash	Q44/77
Cash equivalents (Marketable Securities)	Q44/77
Accounts Receivable	Q44/77
Supplies	Q46/79
Long-Term Assets:	
Long-Term Note Receivable	Q45/78
Property, Plant & Equipment	Q 46/79
Total Assets	Q 43/76
<b>Liabilities and Equity</b>	
<b>Liabilities:</b>	
Current Liabilities (due within 1 year):	Q53/86
Accounts Payable	
ST Notes Payable	
LT Liabilities (loans; term > 1 year):	Q56/90
Bank Notes Payable	
Mortgages Payable	
Total Liabilities:	Q 57/91
<b>Equities:</b>	
Owner Contributions	
Retained Earnings	
Total Equities	Default calculation
<b>II. Income Statement</b>	
Revenues	Q 42/75
- Expenses	Q60/94 (only asks for proportions, not monetary amounts)
= Net Income	Default calculation

## III. Cash Flows Statement

## Inflows:

Cash from operations

Q42/75

Cash from financing activities

Q 57/91; Q47/80

Cash from investing activities

## Outflows:

Cash for operations

Q60/94 (not direct, somewhat close)

Cash for financing activities

Cash for investing activities

Net cash inflow (outflow)

Appendix F-2  
Contextual Variables from the Survey Data Set

The following descriptive statistics are output from SPSS analysis.

Descriptive statistics for population (59 UNEB schools)

	N	Minimum	Maximum	Mean	Std. Deviation
Age	56	.00	101.00	18.3036	23.30737
Tot#Stud	59	114.00	1310.00	423.2712	284.79199
UNEB#Std	59	19.00	203.00	82.8644	40.69799
PrctFemale	54	.00	1.00	52.07	15.990
PrctBrdng	57	.00	1.00	40.38	36.276
StudTchrR	56	9.50	37.66	19.8385	6.54683
Valid N (listwise)	49				

Descriptive statistics for sample (10 schools)

	N	Minimum	Maximum	Mean	Std. Deviation
SclAge	10	2.00	36.00	8.8000	10.20675
Tot#Stdnts	10	208.00	1224.00	649.2000	338.38893
Tot#UNEBs	10	60.00	152.00	93.3000	29.69493
PrctFemale	7	42.86	100.00	55.6163	20.00037
PrctBrdng	8	42.69	100.00	85.1620	20.75107
StudTchrR	9	11.89	37.66	22.8259	8.44073
Valid N (listwise)	6				

Observations:

1. School Age: Population age (18.3) is considerably larger than the sample age (8.8). The sample, however, has a much smaller standard deviation
2. Total Number of Students: The sample mean is much larger (649.2) than the population mean (423.27).
3. UNEB students: This reflects how many students sit for the UNEBs at a school. These means are relatively close.
4. Percentage of Females in a school: These figures are quite close.
5. Percent Boarding Students in a school: The sample mean (85.2) is more than twice as high as the population mean.
6. Student Teacher Ratio: These means are not substantially different.

Discussion:

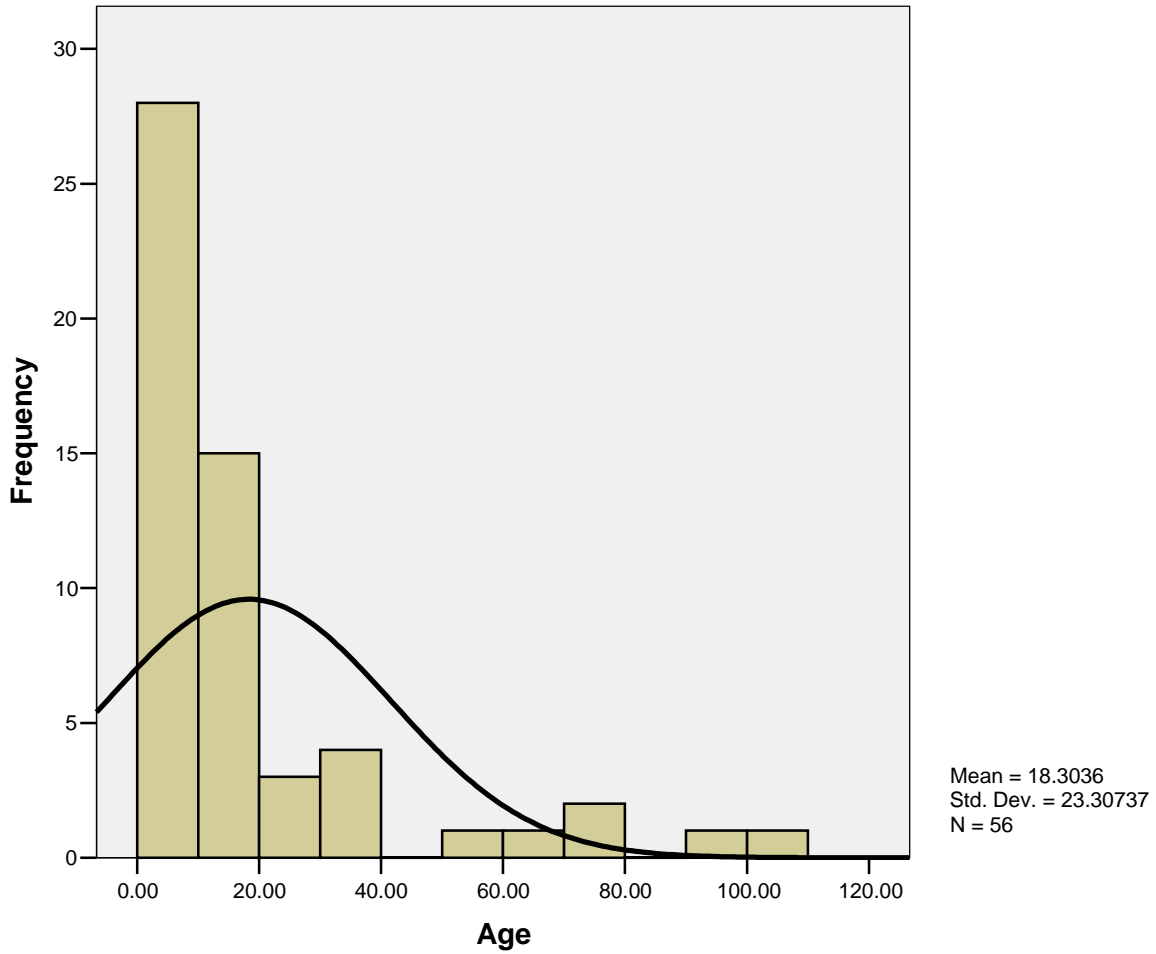
Revenue reports (the defining similarity between the sample schools) are much more likely to be filed by large, new schools. These schools, on the average, have twice as high a proportion of boarding students, compared to the population mean.

Graphs of the distribution of values follow to offer the reader a pictorial explanation of differences in composition between the population (all UNEB schools in the Mukono

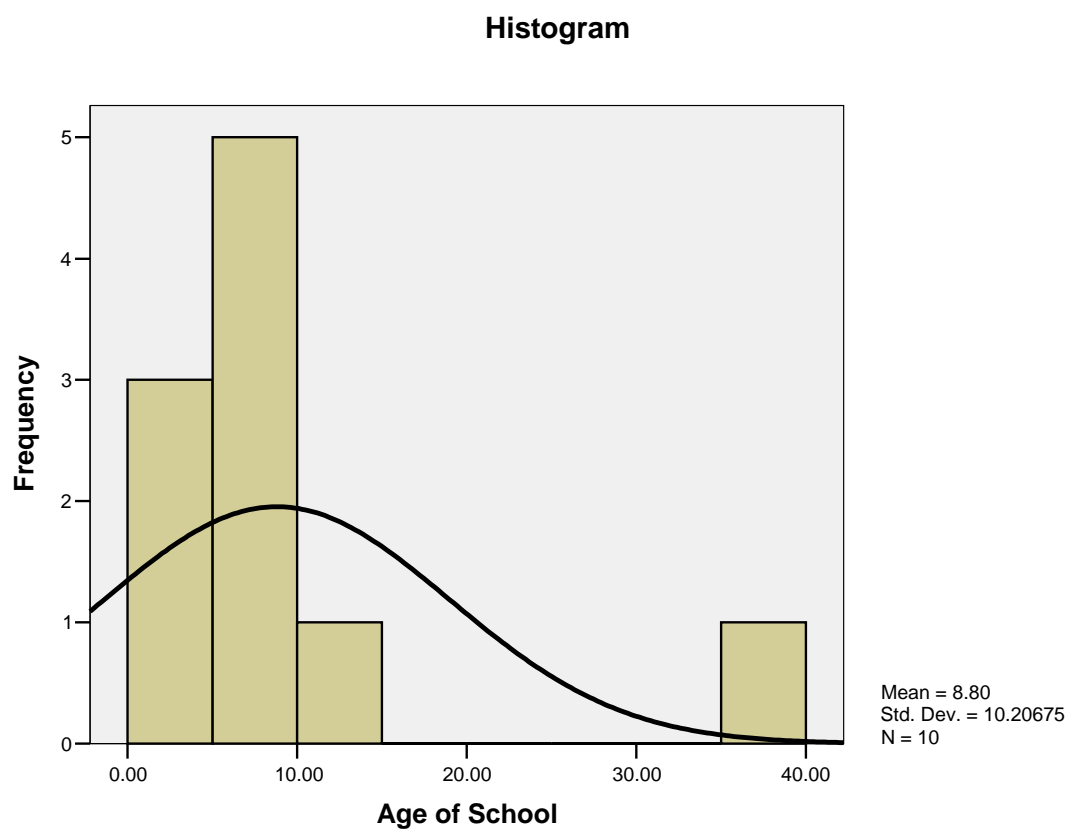


District; n=59) and the sample (those UNEB schools that filed revenue reports for 2003; n=10).

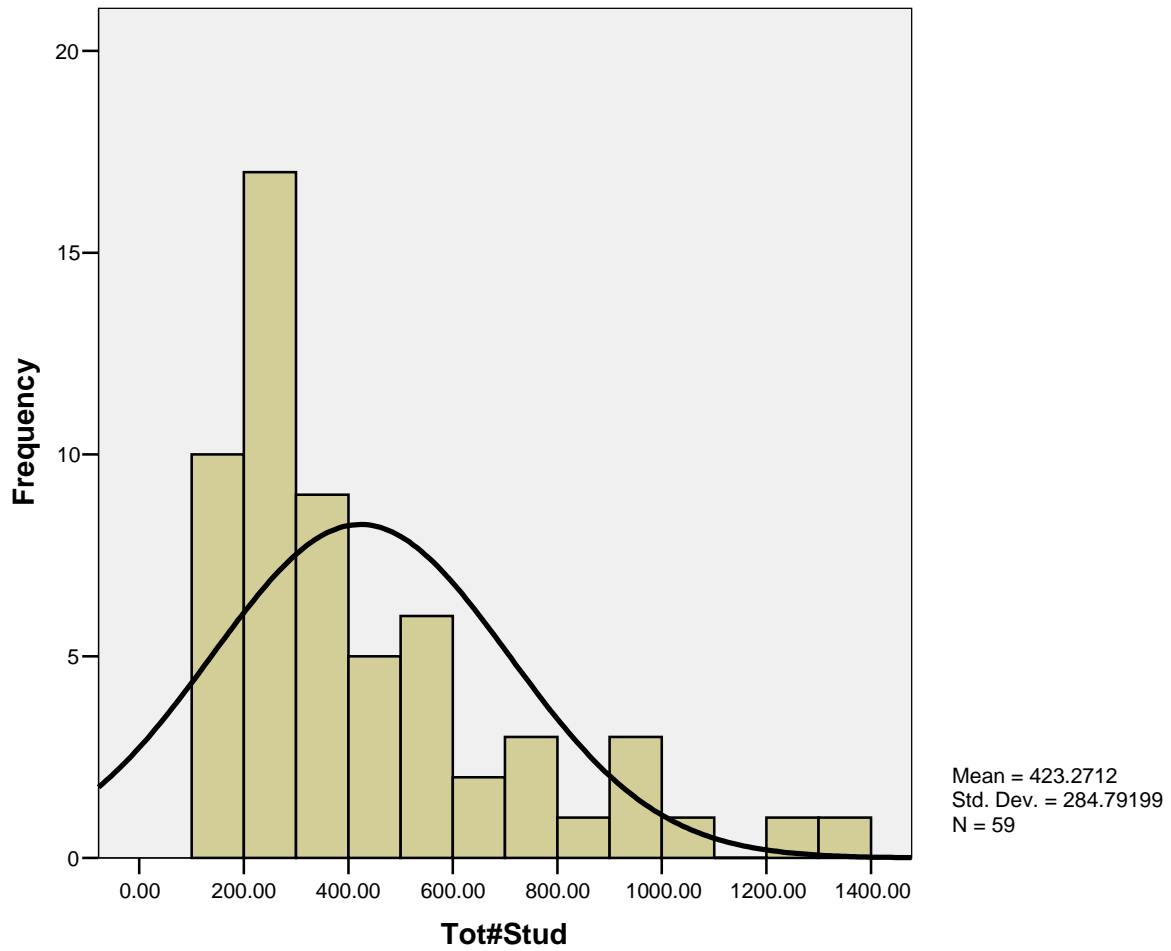
Graph 1: Age of School, population



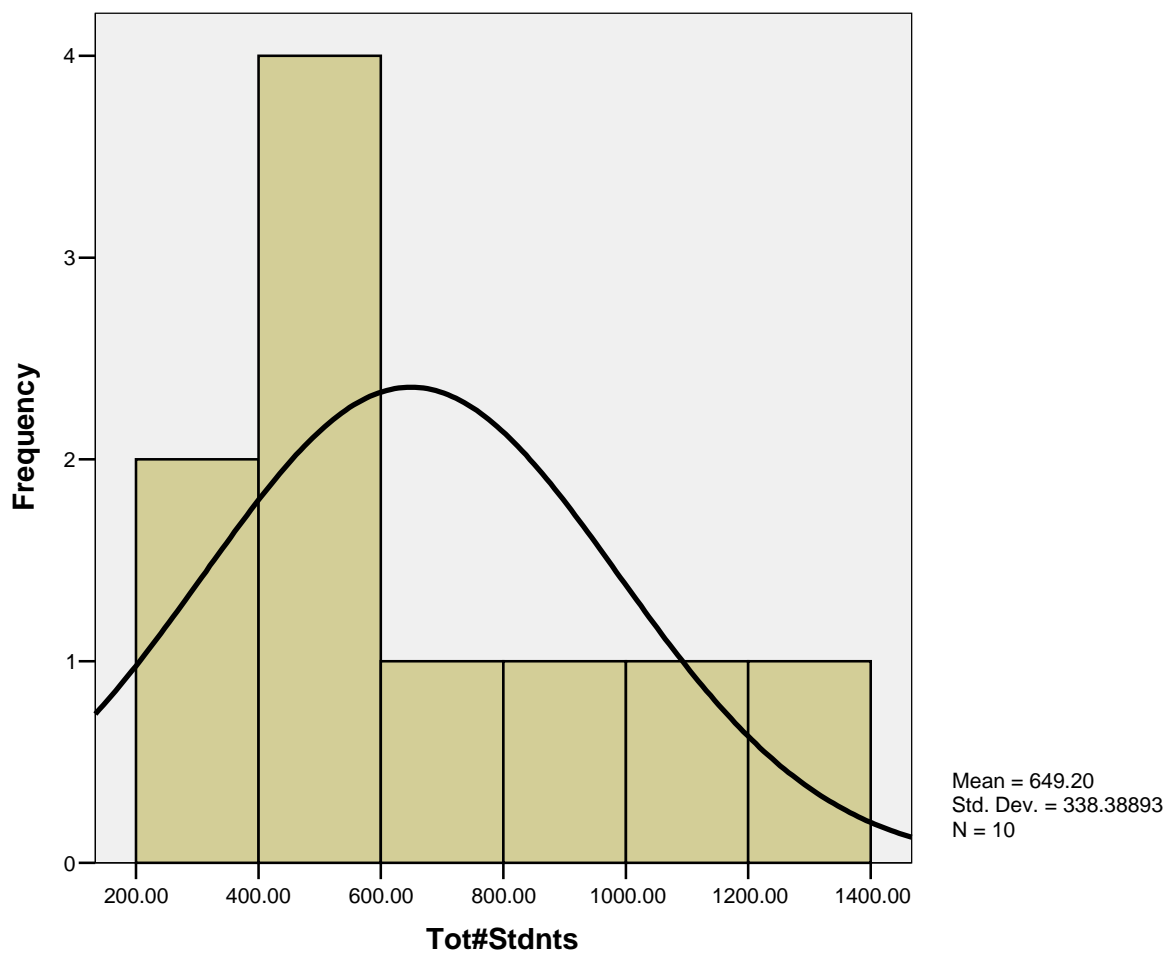
Graph 2: Age of School, sample



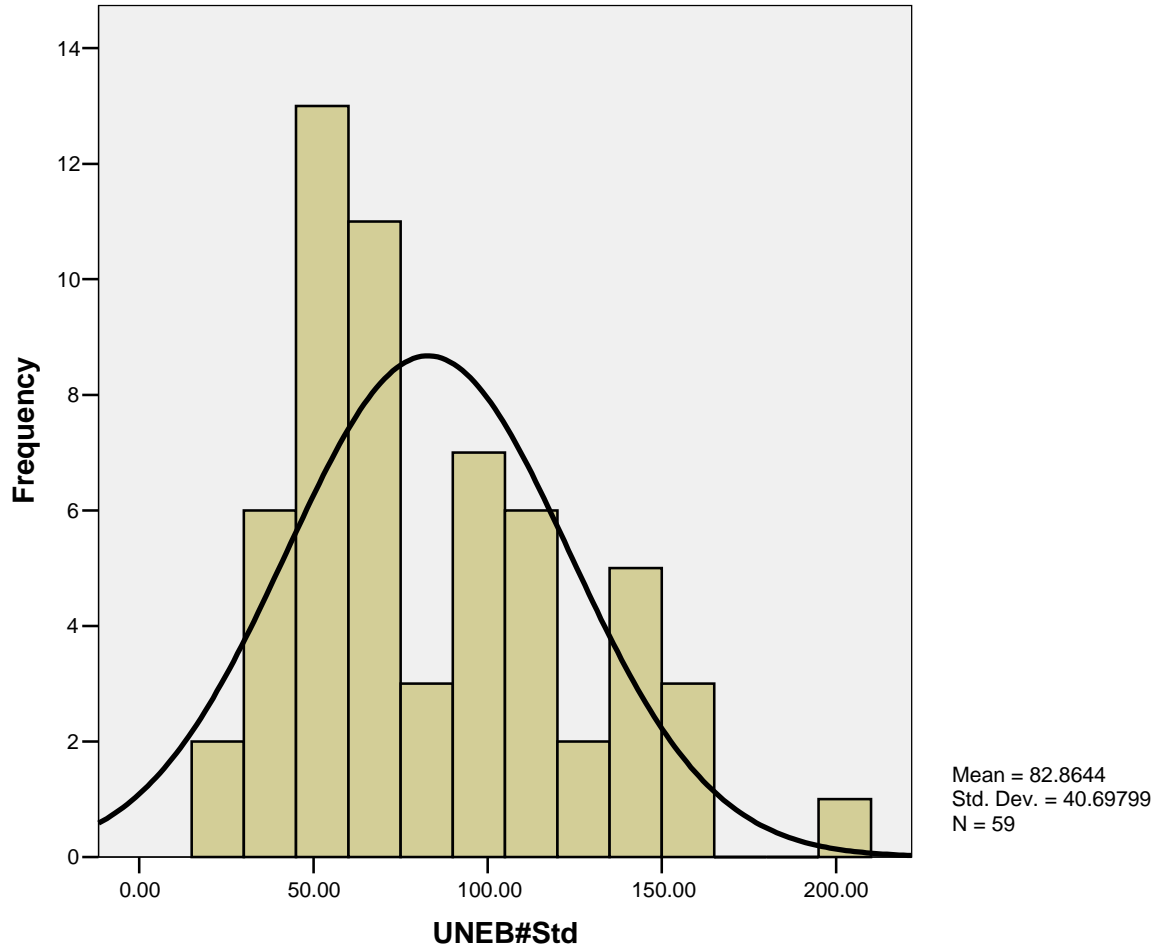
Graph 3: Total Number of Students in School, population



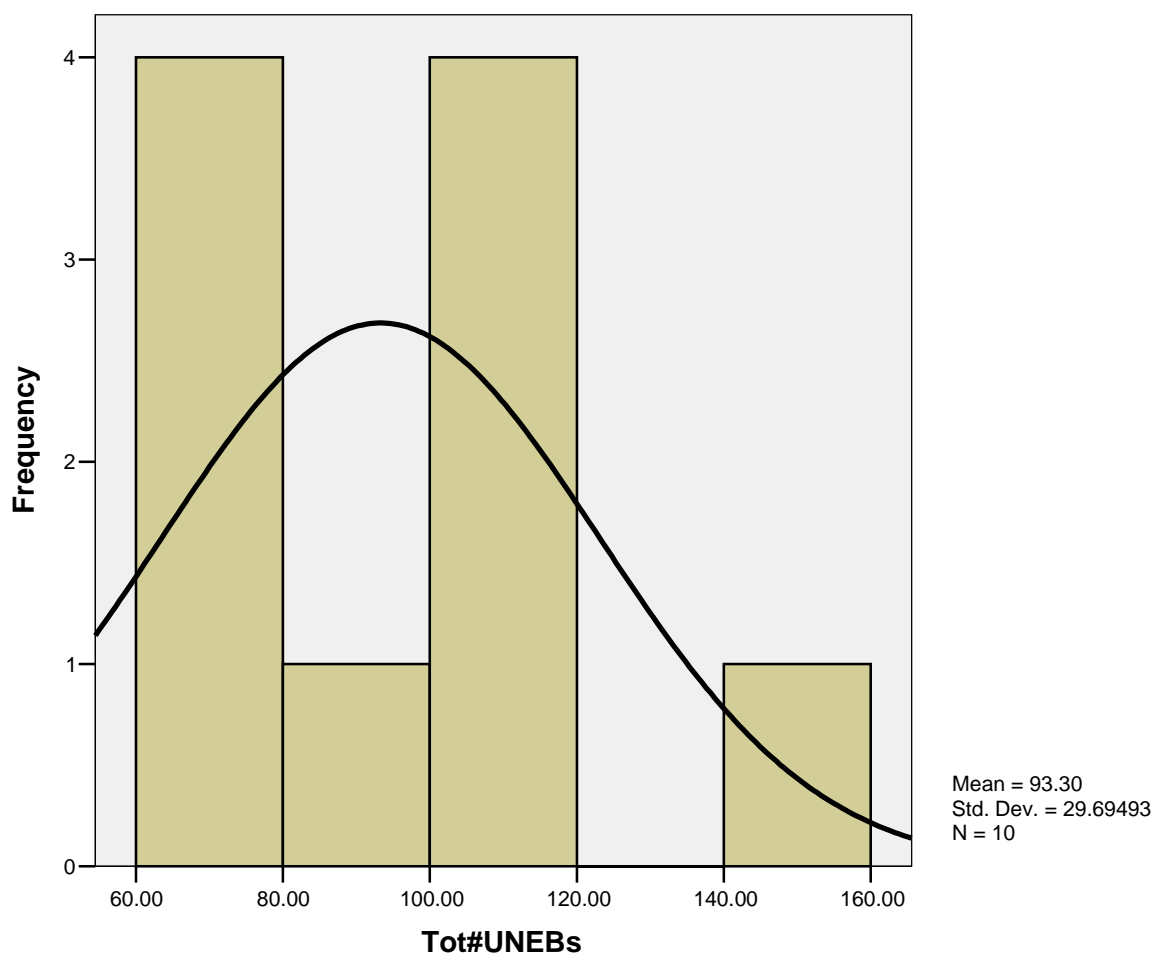
Graph 4: Total Number of Students in School, sample



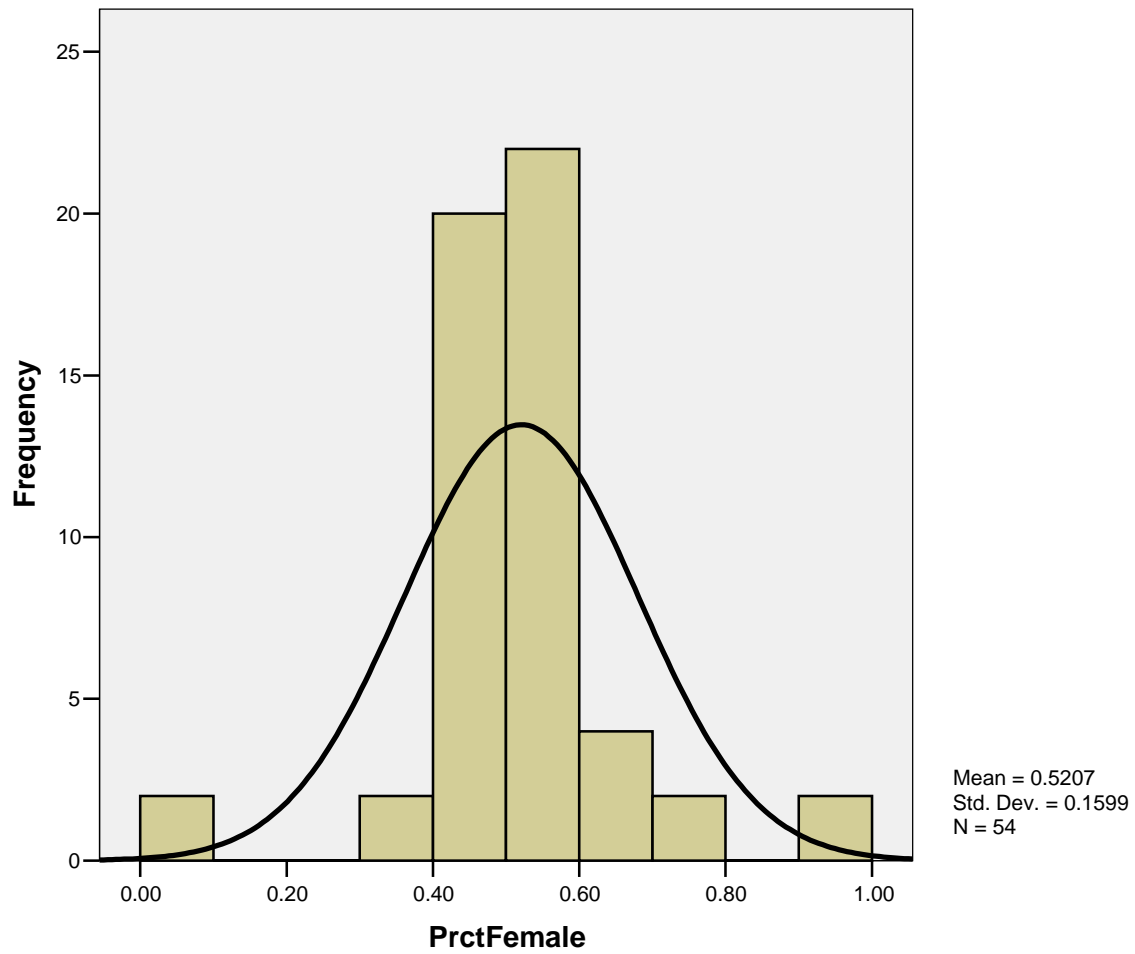
Graph 5: Number of Students taking the UNEB at a school, population



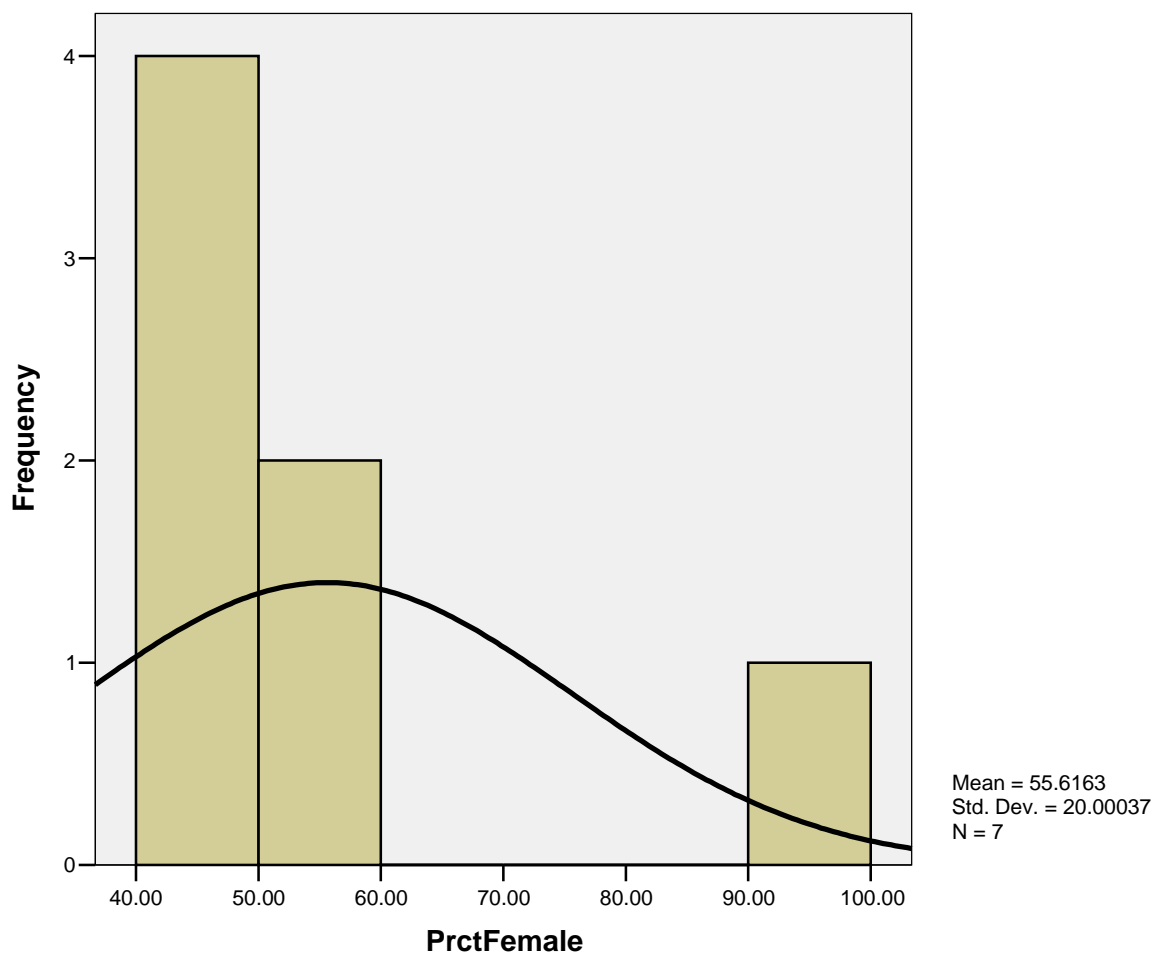
Graph 6: Number of Students taking the UNEB at a school, sample



Graph 7: Percentage of Females in a school, population

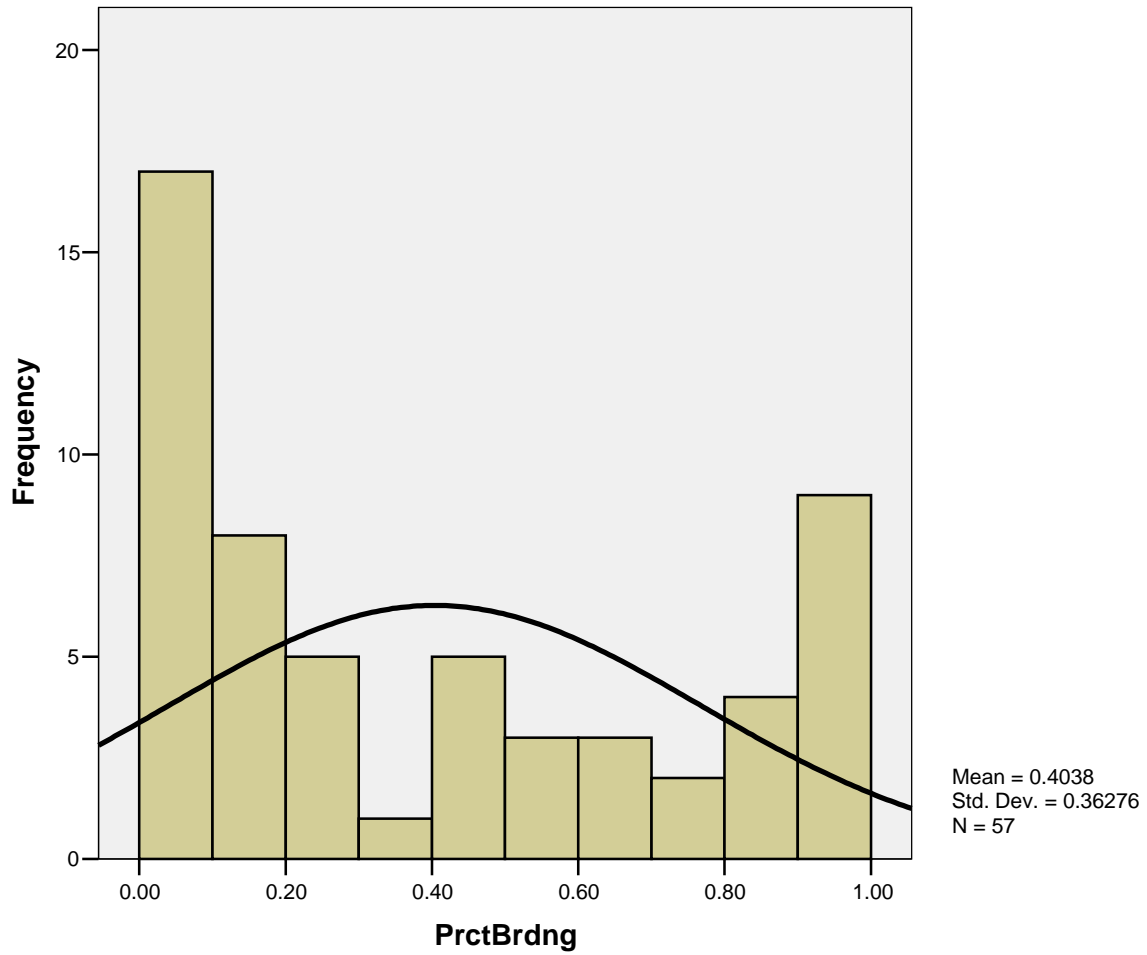


Graph 8: Percentage of Females in a school, sample

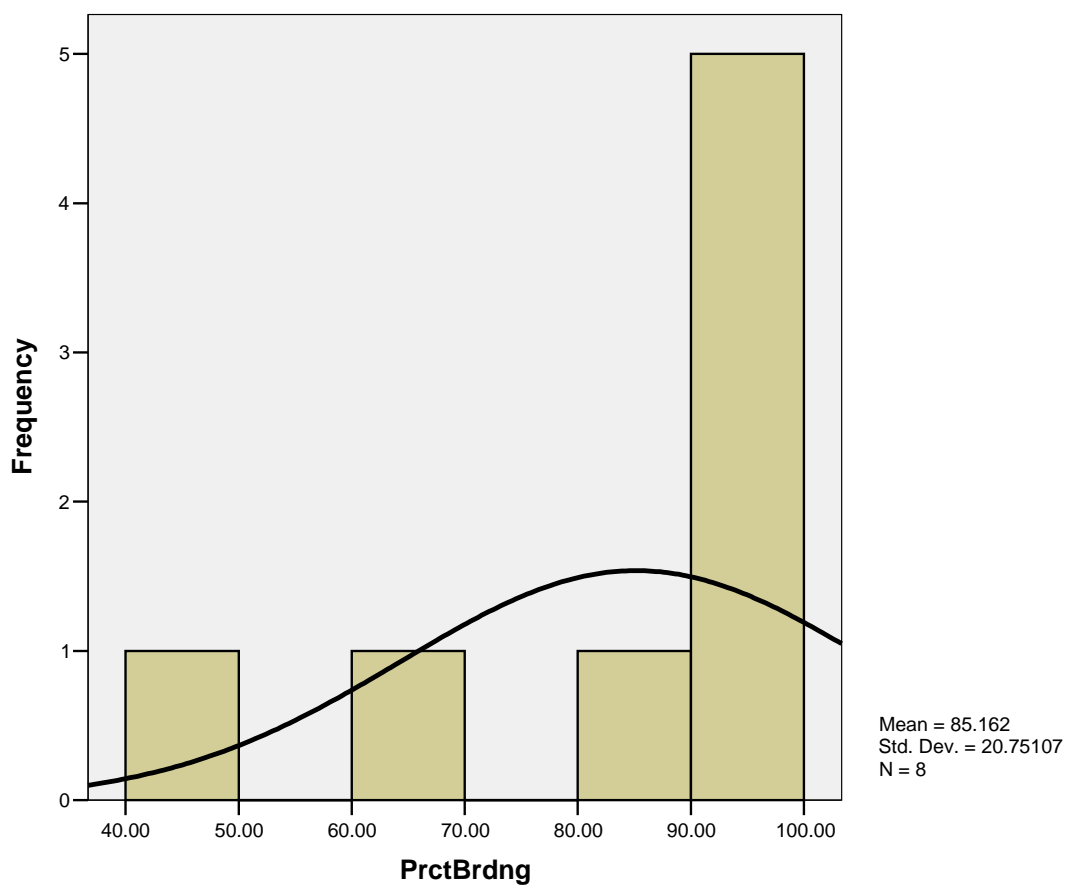




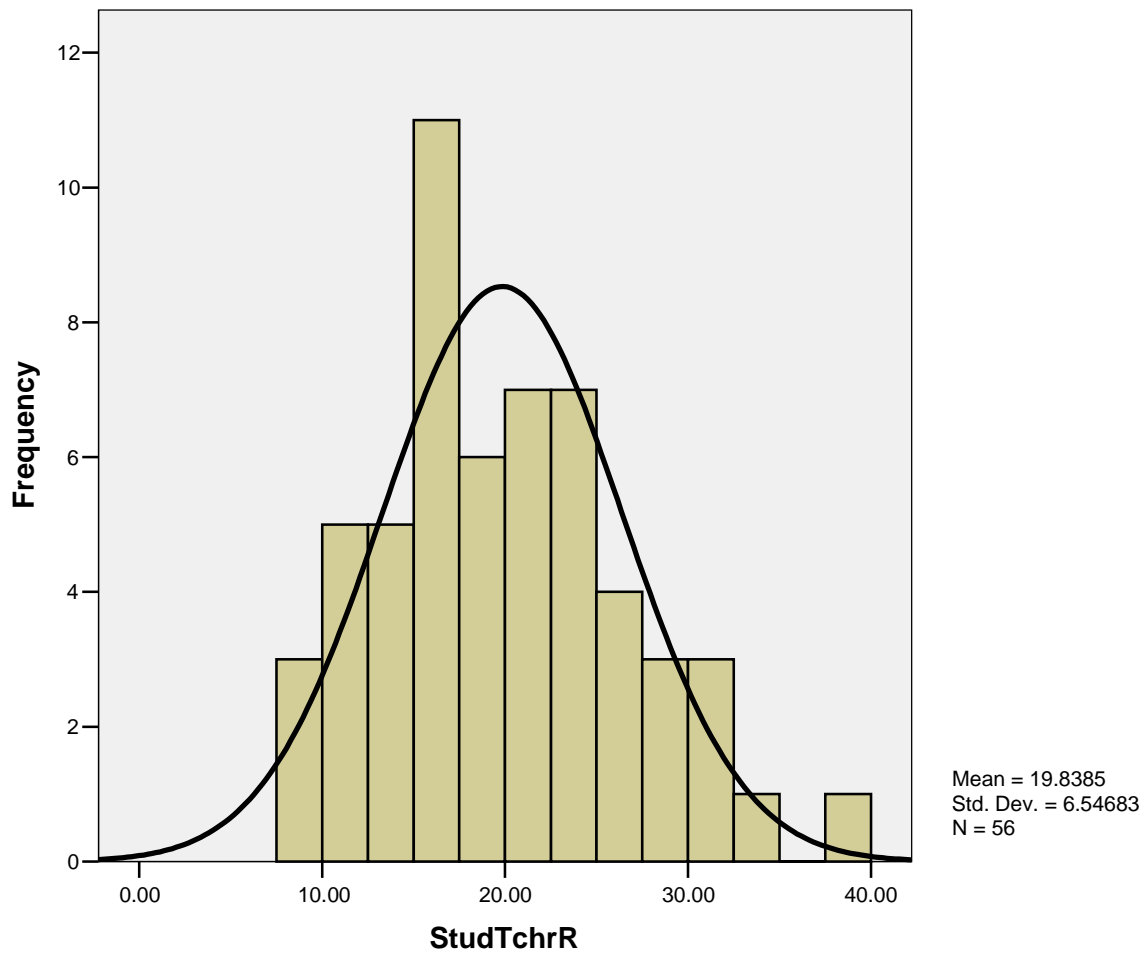
Graph 9: Percentage of Boarding Students in a school, population



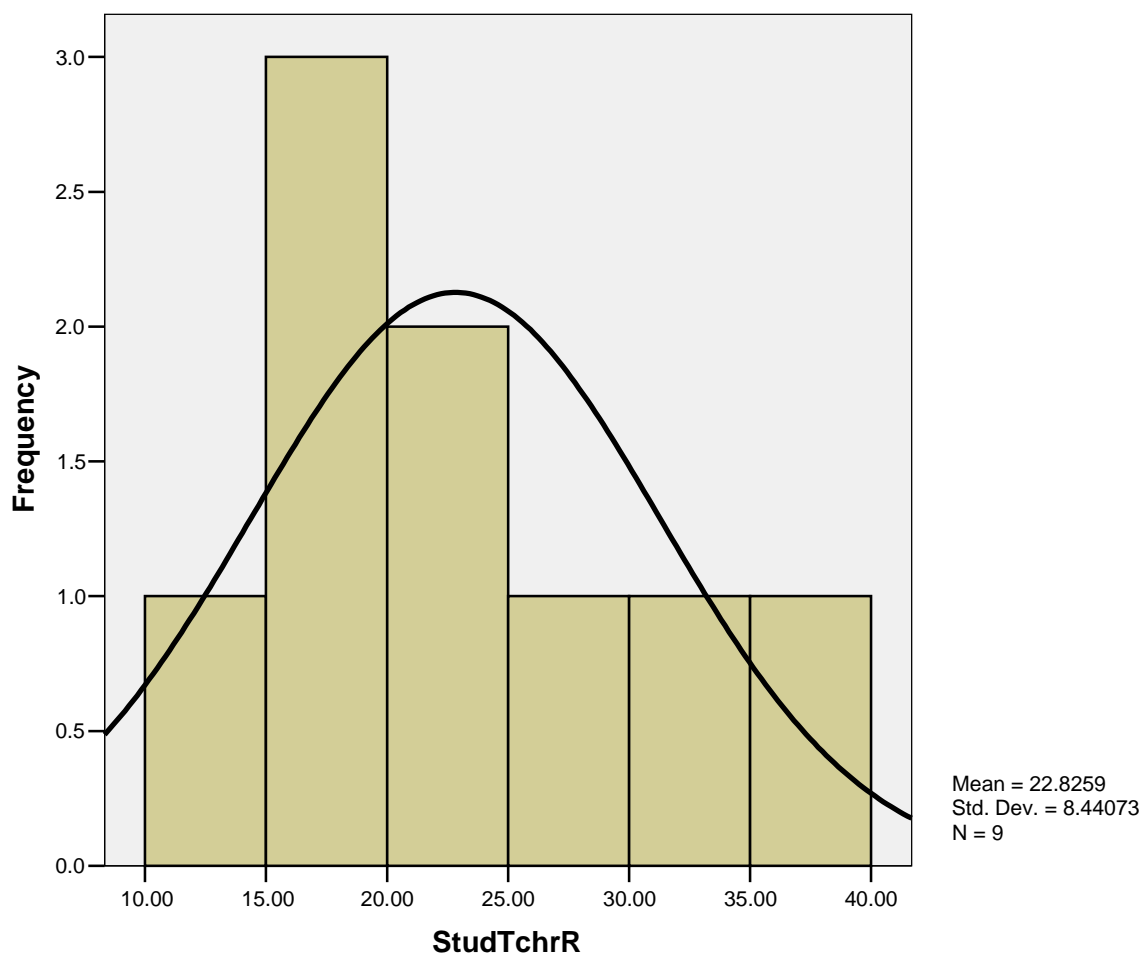
Graph 10: Percentage of Boarding Students in a school, sample



Graph 11: Student Teacher Ratios, population



Graph 12: Student Teacher Ratios, sample





## Appendix F-3

### Data Difficulties, Inconsistencies, and Explanations—Revenue Reports

A number of challenges were encountered in analyzing the revenue report database. Those concerns that impact the analysis process or its outcomes are provided here along with explanations of how each issue was resolved. A brief list of these items is found in Chapter 4.

1. Inconsistency in titles used in financial statements. Different account or line item titles are used for essentially the same thing. For example, some revenue reports use the title “income” to mean “revenues.” Generally in the business world, “income” is another title for “net profit.” The author found it necessary to standardize titles before beginning the analysis.
2. Ambiguity in titles. Several titles, while they may make perfect sense to preparers and those familiar with operations of the schools, are vague or unusual and leave the author questioning their purpose or content. Examples are Administration, Holiday Fees, Field Work, Staff Welfare, Gratuity, Domestic Materials, NSSF.
3. Summary data. Some schools’ revenue reports provided a great deal of detail in their financial statements. Other schools presented their statements more in summary form. In order to make comparisons between the schools, the author found it necessary to identify the “greatest common denominator” between them and re-classify each school’s financial statements accordingly. The following categories were used for income statement re-statements. Appendix F-4 “Income Statement Components from 10 Revenue Reports” provides details on the actual accounts included in each of the expense categories.

A. Total Revenues

B. Expenses:

- 1) Salaries & Wages
- 2) Administration
- 3) Depreciation
- 4) Finance Charges
- 5) Other Expenses
- 6) Bad Debts (6 of the 10 schools identified this expense, so it was kept as a separate line item. It is used in the overall financial analysis of each school.)
- 7) Fixed Assets (may be referred to as Property, Plant & Equipment)

C. Net Income (or Net Profit). This is the calculated difference between Total Revenues and the total of the six expense categories identified above. This amount was verified with the revenue report figures.)

4. Inconsistencies in balance sheet presentations. Most businesses, worldwide, present balance sheet information in the following categories and order:

A. Assets

- 1) Current Assets (listing cash first and continuing on in order of liquidity)
- 2) Intangible Assets
- 3) Fixed Assets (may be referred to as Property, Plant & Equipment)

## 4) Total Assets

## B. Liabilities + Owners' Equity

## 1) Liabilities

- a) Current Liabilities (listing of all liabilities due within the next fiscal year)
- b) Long-Term Liabilities (listing of liabilities due beyond one fiscal year)
- c) Total Liabilities

## 2) Owners' Equity

- a) Contributed Capital (owners' cumulative contributions)
- b) Earned Capital (cumulative earnings – cumulative distributions to owners. (This is generally referred to as “retained earnings”))

## 3) Total Liabilities + Owners' Equity (this total must be equal to Total Assets)

Several of the balance sheets in the revenue reports did not follow this format. However, adequate information was given to allow the author to re-construct balance sheets in the above format and calculate category subtotals so that comparisons could be easily made among the schools and averages could be calculated.

- 5. Inconsistencies in owners' equity presentation. Two of the schools combined contributed capital with earned capital. It cannot be determined what portion of the capital is contributed versus what portion has been retained from earnings of the



school. While this does not affect most calculations for financial analyses, it does obliterate information that could have been useful. If a very small portion of the capital is earned, the profitability of the entity may be questioned. A low balance in retained earnings could, however, also be an indication that the entity is profitable, but the owners chose to distribute the earnings back to the owners.

6. Technical difficulties. Two of the revenue reports contained financial statements that did not *foot and cross-foot*. This means that there was an error in the financial statement itself, perhaps an omission or a transposition error. The figures provided on the statements simply did not add up. All figures were reviewed with a business associate to determine if the author had mis-read the statements. The reason for the errors could not be determined. The magnitude of each error was calculated. For School # 2, the misstatement was extremely small, -0.00019 of 1% of total expenses, so was attributed to “other expense” with virtually no effect on the analysis. For School # 6, two financial statements did not “foot.” The difference on the balance sheet was miniscule and therefore inconsequential. The income statement was more challenging. The revenue reports had been scanned in Uganda and transmitted via email to the author, but several figures were too light to read with confidence. Arrangements were made for the “original copies” obtained from the URA to be hand-delivered to the author. Although many key figures were now legible, a few still remained a mystery. The printing on the reports was extremely light and one key figure was obliterated by a URA stamp. The author determined that as the totals on the income statement were clear, they should be trusted. The “unexplained difference” due to illegibility was classified as an “other expense” to balance this

statement. This unexplained difference was 5.6% of the total expenses. It does not affect calculations that deal with revenues or net income. Its only effect, if misstated, would be on percentages of expenses per the 6 expense categories outlined in #3 above. Furthermore, the “unexplained difference” was not for the target fiscal year, but was contained in the prior year comparative data. Additionally, the depreciation schedules (supporting calculations for depreciation expense which affects the income statement and accumulated depreciation, a contra-account, which affects book value of fixed assets) for 2 schools contain errors. One, School #5, simply does not foot or cross-foot for the equipment category and totals. These erroneous figures were carried on to the income statement and balance sheet. This misstatement is calculated at .08 % or less than 1/10 of 1% of total FA. This is considered by the author to be an immaterial misstatement, but it does draw attention to the fact that although these revenue reports are largely audited, some do contain internal errors. The other, school #4, has nonsensical data in its motor vehicles category. Accumulated depreciation, by definition, cannot exceed historical cost of an asset. Yet on this schedule, the accumulated depreciation is 18 times greater than the shown cost. These figures were also carried forward into the formal financial statements.

7. Incomplete reports. A number of revenue reports did not contain complete financial statements. While these elements may not have been necessary for the purposes of the URA, they would be expected to be included in audited financial statements.

- A. One of the 10 revenue reports lacked comparative data. Financial statements were included for the filing year, but no data was included from the prior year. While this is likely not a requirement

of the URA, it would have been helpful for analysis purposes. This lack of comparative data meant that no horizontal (trend) analysis could be performed for that school.

- B. One of the 10 revenue reports lacked a balance sheet. It appears that this was filed (according to the page numbers on the report transmitted, two pages are unaccounted for), but was simply not included in the revenue report that was provided to the researcher. Inquiries were made, but no additional information could be obtained. From the distance of half-way around the world, the researcher was faced with the decision of whether or not to use the rest of this revenue report or to exclude it entirely. As the data pool for revenue reports was already extremely small, the researcher determined that it would be beneficial to use the portion that was complete.
- C. Six revenue reports did not include cash flows statements. This was less of a surprise because the cash flows statement has found worldwide acceptance relatively recently and has been required by many countries for only a decade or two. Additionally, it does not impact the calculation of taxes, the primary purpose for revenue reports. This lack of cash flows statements, however, greatly impacts the ability to perform some of the analyses proposed in this project. For example, any ratio that requires the inclusion of “cash flow from operations” in its calculation can be performed only for the three

schools which identify “cash flow from operations.” The fourth cash flows statement is formatted such that this figure is not specifically identified and cannot be reliably calculated. The other 6 schools have no cash flow data at all in their revenue reports.

8. Inconsistency in fiscal years. As previously stated, a fiscal year is generally a twelve month period designated for financial reporting, ending on the same date each year.

Two challenges emerged when studying the revenue reports that relate to fiscal years.

- A. One school provided reports based on a 16-month fiscal year. Income statement data was prorated to re-state results as 12-month figures. Balance sheet data was taken as presented as it is a snapshot of the financial makeup of the entity at a particular point in time and does not measure activity for a period of time as does an income statement.
- B. Although the request was made for revenue reports with fiscal years ending as close to June 30, 2003, as possible, the revenue reports actually obtained bear fiscal year ending dates as follows. Revenue reports for three schools have fiscal year ends in 2002; six in 2003 and one in 2004. This inconsistency limits strict comparability, but does provide the best data that could be obtained in this developing nation setting.



## Appendix F-4

### Income Statement Components from 10 Revenue Reports

The income statements from the 10 revenue reports were re-formatted and summarized into categories that allowed for comparisons between schools.

The following categories were used for income statement re-statements. Actual account titles included in each expense category are shown parenthetically.

1. Total Revenues
2. Expenses:
  - A. Salaries & Wages (includes such expenses as Salaries & Wages, Staff Welfare, Directors' Remunerations, and Directors' Allowances)
  - B. Administration (includes items such as Rent, Telephone, Stationery, Consultancy, Insurance, License/Fees, Advertising, Electricity, Office Expense, Printing, Postage, Firewood, Fuel-Generator, Security, Town Council Rates, Audit Charges, Examination, Seminars, Staff Accommodation, Computer Repairs, Membership Fees, Email, Office Running, Publicity, Heating & Lighting, Tuition & Examination Expenses, Staff Training, Water, Legal Fees, Admission Expenses, UNEB Marking Expenses, Water & Sewage, Seminars & Workshops, Audit & Accountancy, Land Transfer Expenses)
  - C. Depreciation (Depreciation was usually included as supplemental information in the revenue report. The totals

from that schedule were carried into the income statement. See Appendix F-5, “Depreciation, Comparisons and Effects” for a comparison of depreciation rates by school, discussion, and the effect of depreciation on the net income of each school.)

- D. Finance Charges (includes Bank Charges, Interest Paid on Overdraft, Interest, Bank Charges & Commissions)
- E. Other Expenses (this is a catch-all category which includes Food, Medical, Sundry Expenses, Uniform, Entertainment & Sports, Motor Vehicle Repairs, Maintenance & Repairs, Transport & Travel, Games & Sports, Uniforms, Burial & Condolences, Fumigation, Newspapers Magazines, Architect Fees, Clubs & Seminars, Sanitation & Cleaning, Building Renovations, Generator Repairs, Kitchen Repairs, Library Costs, Food & Kitchen Requirements, Prizes, Cleaning Materials, Education Trips, Teaching Aids, Traveling, Special Allowances, General Expenses, Tools & Machinery Repairs & Maintenance, Water System Repair, General Instruction Materials & Part, Bursary Awards, School Garden, Sports Fluid Expense, Feeding Expenses, Co-Curricular Activities, Motor Vehicle Running Expenses, Scholastic Materials, Entertainment, Students Catering, Farm Expenses, Donations & Subscriptions, Drama & Sports, Bed Repairs, Mowing Machine-Write Off, Gratuity, Poultry, NSSF, Water Project)

- F. Bad Debts (6 of the 10 schools identified this expense, so it was kept as a separate line item. It is used in the overall financial analysis of each school.)
3. Net Income (or Net Profit). This is the calculated difference between Total Revenues and the total of the six expense categories identified above. This amount was verified with the revenue report figures.





## Appendix F-5

### Depreciation, Comparisons, and Effects

#### *Discussion of Depreciation in the 10 Revenue Reports*

Depreciation rates vary considerably across the 10 sample schools. The notes to the financial statements generally disclosed depreciation rates per category of assets. Where disclosure was not made, depreciation expense for the year was compared with the depreciable basis of the asset in question to calculate the rate of depreciation taken for that asset group.

The following table, Table F-5.1, summarizes the method of depreciation used and the rates of depreciation for each asset category. Generally accepted accounting principles (GAAP) allow for several depreciation methods. Depreciation is shown as an expense on the income statement.

Land is traditionally not considered to be a depreciable asset, unlike other long-term or fixed assets, as it is not “used up” and has an indefinite life. There was inconsistency in the application of depreciation to building. This is generally the single largest depreciation item on an income statement. Not taking depreciation expense on a building would lower the total expenses which (artificially) increases net income.

The few revenue reports that disclose tax calculations show that depreciation is added back to the net income (loss) figure from the bottom line of the income statement in determining a profit or loss for tax calculations. An adjustment is then made for “wear and tear,” apparently an expense dictated in lieu of depreciation for Uganda Revenue Authority tax purposes.

The following problems in calculations were noted in a review of depreciation schedules.

1. By definition, accumulated depreciation cannot exceed the historical cost of an asset. However, in one instance the accumulated depreciation shown on the depreciation schedule was 18 times the amount of the historical cost shown. This nonsensical data is likely the result of a transfer error where a figure may have been correct on another schedule or working paper that is not included in the revenue report, but was transferred erroneously to this depreciation schedule. The problem is exacerbated by its use in calculations that are then transferred to the income statement (misstated depreciation expense) and to the balance sheet (misstated book values on fixed assets).
2. Inconsistency in rates applied and asset categories. Although most of the Notes to the financial statements disclosed depreciation rates per category, these were not always the rates employed in the accompanying depreciation schedule calculations. Occasionally an asset category identified in the Notes did not even exist in the accompanying depreciation schedule. Conversely, at times, asset categories appeared in the depreciation schedules that were not shown in the Notes.

*Effect of Depreciation on Net Income in the 10 revenue report schools*

Depreciation rates, as shown in Table F5.1, are not consistently applied across schools. The following table addresses the question: “What if depreciation were eliminated as an expense on the income statement; what would the effect be on net income?” This would nullify the effect of inconsistently applied rates and methods of depreciation and may allow for greater comparison of “untainted” income figures.

Table F5.1

*Comparison of Depreciation Rates Methods and Rates per Asset Category*

School #	% Depreciation Rates									
	1	2	3	4	5	6	7	8	9	10
Method	RedBal	StrtLine	StrtLine	StrtLine	RedBal	StrtLine	StrtLine	StrtLine	RedBal	StrtLine
Land			0	0			0	0	0	0
Land/Bldg		0			4	4				
Buildng			4	2.5						0
Equipment	12.5	20		12.5	20		20	12.5		20
Funishings	12.5	20	20	12.5	20	10	20	12.5	25-35	20
Computers	33.3	40	50		20				15	40
Vehicles				25	35	20		25	30	35
Generator		20								20
Water Tank		20								20
Water System			20							
Roads&Compound			20							
ElectricalSystem			20							
Textbooks					20	15			CBD	
Books								0		
Tools/Machinery						10				
Office Equipment						10				
Beds								20		

RedBal=Reducing Balance Method of depreciation

StrtLine=Straight Line Method of depreciation

7 used StrtLine; 3 used ReducingBalance

0=Present, but not depreciated

CBD=reducing balance rate cannot be determined from information given.

Approx 23.6% depreciation expense for this FY

Table F-5.2 shows what net income percentages would be if depreciation expense were ignored, i.e., it is added back to the net income figure to negate its effect on the income statement.

These figures are derived from the common size statements (they are expressed as percentages of net revenues), therefore, they are comparable across schools. Bolded figures highlight those schools whose comparative rankings would change if depreciation were eliminated.

Table F5.2

<i>Net Income as a Percentage of Net Revenues, Recalculated without the Effects of Depreciation</i>					
School#	Depr%	NI%	NI+Depr%	Ranking	PriorRnkng
1	6.600057	9.24928	15.84934	<b>2</b>	<b>3</b>
2	8.637312	-6.16189	2.475424	<b>7</b>	<b>9</b>
3	15.31357	9.550227	24.8638	1	1
4	2.464793	2.464684	4.929477	5	5
5	0	-2.1486	-2.1486	<b>9</b>	<b>7</b>
6	8.162513	-12.9932	-4.83071	10	10
7	3.139419	2.90844	6.047858	4	4
8	2.066751	1.825018	3.891769	6	6
9	4.366088	-2.87354	1.492548	8	8
10	3.915663	9.507656	13.42332	<b>3</b>	<b>2</b>

Average Net Income per Revenue Reports	1.299093
Average Net Income without Depreciation Expense	6.599423

The “Average Net Income without Depreciation Expense” shows that if depreciation were not considered as an expense on the revenue reports, net income would, on the average, be 6.6 % of net revenues. Currently, with depreciation included as an expense on the revenue reports, the average net income is calculated at 1.3% of net revenues.

It is interesting to note that School #3 had the highest depreciation as a percentage of net revenues at 15.3%. However, it also had the highest net income %, even before depreciation is added back.

## Appendix F-6

## Brief Explanation of Accounting and Financial Statements

*The Accounting Equation*

Accounting systems are based on a simple formula, known as the “accounting equation”. This equation must always be kept in balance. Understanding this relationship helps users of financial statements to explore relationships of various items contained in the financial statements.

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity (capital)}$$

Increases (or decreases) in assets must be accompanied by increases (or decreases) in liabilities and/or increases (or decreases) in capital (also referred to as owners' equity).

Balance sheets are constructed on this simple formula. Total assets are primarily an accumulation of current assets—cash or those assets that may be consumed or converted to cash within the next fiscal year—and fixed assets—land, buildings, equipment, etc. which have a useful life greater than one fiscal year.

Assets may be obtained in three basic ways. Each will keep the accounting equation in balance.

1. One asset may be exchanged for another. As one asset is increased, another is decreased by the same amount. For example, cash is used to purchase land or equipment.

2. Debt may be incurred to obtain an asset. As assets are increased, liabilities on the other side of the equation are increased. For example, land may be obtained by signing a financing agreement which requires future payment of assets.
3. Assets may be obtained through capital activities. For example, the owner may contribute cash to the organization. The asset entitled “cash” would increase as would the owner’s capital account.

Liabilities represent credit obtained, or debt owed. These are amounts due to be paid to outside entities. Those liabilities that have due dates within the next fiscal year are referred to as current liabilities. Long-term liabilities are those liabilities that have due dates beyond the next fiscal year.

Owners’ Equity represents the owners’ interest in the assets of the organization. Using simple algebra to manipulate the accounting equation, it is easy to see that owners’ equity is a residual amount.

$$\text{Owners' Equity} = \text{Assets} - \text{Liabilities}$$

Owners’ equity partly consists of amounts contributed to the organization by the owners. This may be referred to by such titles as “capital”, “owners’ contributions,” or “stock.” Another important component of owners’ equity is the cumulative amount of earnings (often referred to as Retained Earnings) less payments that have been made to the owners (known as distributions, dividends, or owner withdrawals). Therefore, owners’ equity is a combination of contributed capital and earned capital.

### *The Balance Sheet*

The balance sheet lists all assets, liabilities, and owners' equity accounts. The accounting equation is the foundation for the balance sheet. Assets must equal the total of liabilities and owners' equity.

### *The Income Statement*

An income statement contains information about revenues earned by the entity. Expenses are subtracted from revenues to identify net income (or loss) for the fiscal period.

### *The Cash Flows Statement*

A cash flows statement shows sources of cash flowing into the organization. It also identifies the uses of cash for the period. Cash activities from operations are usually isolated from cash activities derived from or used in investing or financing activities.





## Appendix F-7

## Summary of Horizontal Analysis—Balance Sheets and Income Statements

Table F7.1

*Balance Sheet: Percent Change in Category (using prior year as the basis—denominator)*

Balance Sheet, by Category										
School #	1	2	3	4	5	6	7	8	9	10
	% chng from 2002	% chng from 2001	% chng from 2002	2004 only	% chng from 2002	% chng from 2001	% chng from 2002	% chng from 2002	% chng from 2002	
Quick A	-22.27	33.72	360.89	--	-33.32	-31.67	40.48	402.5	-81.85	No BS
CA	126.6	23.43	360.89	--	-13.17	-37.74	20.42	402.5	-81.85	
FA	80.96	0.165	45.287	--	129.37	2.567	-0.17	10.549	52.75	
Tot A	83.98	2.888	45.509	--	122.56	1.511	1.618	15.075	43.048	
CL	155.2	-0.049	118.33	--	200.82	25.35	-8.17	325.07	226.74	
LTL	--	--	--	--	146.66	--	--	0	0	
Tot L	155.2	-0.049	118.33	--	158.15	25.35	--	14.809	70.744	
Cap	0	18.05	--	--	0	3.296	5.746	0	0	
RE	610.3	-37.47	--	--	-78.93	154.8	--	-9.146	37.996	
TotOE	54.67	3.916	43.94	--	-28.29	-8.69	150.8	17.878	-6.924	
TotL+OE	83.98	2.888	45.509	--	122.56	1.511	1.618	15.075	43.048	

Key to abbreviations used in Table F7.1:

% chng = Percent change in this figure from the prior year, using the prior year as the denominator

Quick A = Quick Assets

CA = Current Assets

FA = Fixed Assets

Tot A = Total Assets

CL = Current Liabilities

LTL = Long-term Liabilities

Tot L = Total Liabilities

Cap = Capital (owners' contributions or total capital if no retained earnings is identified)

RE = Retained Earnings

TotOE = Total Owners' Equity

TotL+OE = Total Liability + Owners' Equity

Table F7.2

*Income Statement: Percent Change in Category (using prior year as the basis—denominator)*

Income Statement, by Category										
School #	1	2	3	4	5	6	7	8	9	10
	% chng from 2002	% chng from 2001	% chng from 2002	2004 only	% chng from 2002	% chng from 2002	% chng from 2002	% chng from 2002	% chng from 2002	% chng from 2002
Net Rev	85.23	19.55	36.621		62.095	25.4	29.88	-12.07	29.815	15.7
1 S&W	89.19	50.93	32.951		34.454	14.4	25.82	26.414	22.33	36.14
2Admin	33.5	-1.443	91.602		84.888	167.2	0.013	-29.77	33.583	2.274
3Depr	89.12	82.98	20.941		--	146.8	23.89	-7.091	0.4374	25.21
4Fin	183.3	43.61	58.443		168.86	116	443.2	138.64	19.485	17.76
5OtherExp	94.99	25.14	34.028		41.342	11.18	53.38	-20.9	28.398	2.685
6B/D	94.77	--	--		--	-41.73	--	-64.68	--	--
Total Exp	72.96	29.99	36.622		68.58	34.22	30.38	-12.97	25.708	16.03
NetInc	510.3	-411.8	0		-295.6	192.7	14.99	97.847	-40.17	12.63

Key to abbreviations in Table F7.2:

Net Rev = Net Revenues

1S&W = Salaries and Wages Expenses

2Admin = Administrative Expenses

3Depr = Depreciation Expense

4Fin = Financial Expenses (Bank Charges, Interest Expense, etc.)

5OtherExp = Other Expenses (all others that were not included in the above 4 expense categories or Bad Debts)

6B/D = Bad Debts (uncollectible accounts receivable written during the fiscal year)

Total Exp = Total Expenses

NetInc = Net Income (Net Revenues – Total Expenses)

## Appendix F-8

## Horizontal Analysis—Industry Averages:

## Percent Changes for Balance Sheets and Income Statements

## Balance Sheet, by category

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
QuickAssts	8	-81.85	402.50	83.5592	188.40482
CurrntAssts	8	-81.85	402.50	100.1387	184.12845
FixedAssts	8	-.17	129.37	40.1851	46.78897
TotAssts	8	1.51	122.56	39.5231	44.30545
CurrntLiabs	8	-8.17	325.07	130.4130	119.61316
LngTrmLiab	8	.00	146.66	18.3321	51.85105
TotLiabs	8	-8.17	158.15	66.7980	69.01835
Capital	8	.00	18.05	3.3862	6.30034
RetaindErng	8	-78.93	610.32	84.6926	223.03772
TotOwnrEqty	8	-28.29	150.77	28.4085	56.63787
TotLiabOEqt	8	1.51	122.56	39.5231	44.30545
Valid N (listwise)	8				

## Income Statement, by category

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
NetRevenue	9	-12.07	85.23	32.4694	27.78130
SalWages	9	14.40	89.19	36.9592	22.09323
Admin	9	-29.77	167.24	42.4321	61.75141
Depr	8	-7.09	146.78	47.7831	53.18582
FinChrgs	9	-58.44	443.24	119.1621	145.54383
OtherExp	9	-20.90	94.99	30.0282	32.84927
BadDebt	3	-64.68	94.77	-3.8793	86.20051
TotExp	9	-12.97	72.96	33.5027	25.84745
NetIncome	9	-411.81	510.32	8.9968	265.84024
Valid N (listwise)	3				



## Appendix F-9

## Common Size Balance Sheets, 2 Years for Each School

Table F9.1

*Common Size Balance Sheets, 2 Years for Each School*

School #	1	2	3	4	5					
%TotAssts-Common Size										
FYE	2003	2002	2002	2001	2003	2002	2004	NA	2003	2002
Quick A	2.79	6.61	7.73	5.95	0.22	0.07	0		1.22	4.08
CA	8.15	6.61	14	11.7	0.22	0.07	6.23		1.87	4.78
FA	91.9	93.4	86	88.3	99.8	99.9	93.8		98.1	95.2
Tot A	100	100	100	100	100	100	100		100	100
	0	0	0	0	0	0	0		0	0
CL/TotL	100	100	100	100	100	100	100		24.7	21.2
LTL/TotL	0	0	0	0	0	0	0		75.3	78.8
Cap/OE	58.9	91	84.7	74.5	100	100	59.3		89.5	64.2
RE/OE	41.1	8.96	15.3	25.5	0	0	40.7		10.5	35.8
TotL/TotLOE	40.4	29.2	25.2	25.9	3.16	2.11	5.11		93.8	80.9
TotOE/TotLOE	59.6	70.8	74.8	74.1	96.8	97.9	94.9		6.15	19.1
Total L+OE	100	100	100	100	100	100	100		100	100

School #	6	7	8	9	10					
%TotAssts-Common Size										
FYE	2002	2001	2003	2002	2002	2001	2003	2002	NA	NA
Quick A	1.3	1.93	6.06	4.38	5.04	1.15	0.91	7.21		
CA	1.61	2.62	10.3	8.69	5.04	1.15	0.91	7.21		
FA	98.4	97.4	89.7	91.3	95	98.8	99.1	92.8		
Tot A	100	100	100	100	100	100	100	100		
	0	0	0	0	0	0	0	0		
CL/TotL	100	100	100	100	16.9	4.56	59.7	31.2		
LTL/TotL	0	0	0	0	83.1	95.4	40.3	68.8		
Cap/OE	122	108	100	100	251	295	127	118		
	-									
RE/OE	22.1	-5.5	0	0	-151	-195	-27	118		
TotL/TotLOE	37	30	26.8	29.7	91.1	91.3	76.8	64.3		
TotOE/TotLOE	63	70	73.2	70.3	8.87	8.66	23.2	35.7		
Total L+OE	100	100	0	0	100	100	100	100		

Basis = % of total assets (or alternatively % of total liabilities + owners' equity which yields exactly the same result, given the accounting equation)

(See key on the next page.)

## Key to abbreviations used in Table F9.1:

FYE = Fiscal Year Ending

Quick A = Quick Assets

CA = Current Assets

FA = Fixed Assets

Tot A = Total Assets

CL/TotL = Current Liabilities / Total Liabilities

LTL/TotL = Long-term Liabilities / Total Liabilities

Cap/OE = Capital (owners' contributions) / Total Owners' Equity

RE/OE = Retained Earnings / Total Owners' Equity

TotL/TotLOE = Total Liabilities / (Total Liabilities + Total Owners' Equity)

TotOE/TotLOE = Total Owners' Equity / (Total Liabilities + Total Owners' Equity)

Total L +OE = Total Liabilities + Total Owners' Equity

NA = School 10 revenue reports did not contain balance sheet information.

## Appendix F-10

## Common Size Income Statements, 2 Years for Each School

Table F10.1

*Common Size Income Statements, 2 Years for Each School*

School #	1		2		3		4		5	
%Net Rev's-Common Size										
FYE	2003	2002	2002	2001	2003	2002	2004	NA	2003	2002
Net Rev	100	100	100	100	100	100	100		100	100
1 S&W	18.16	17.78	39.67	31.42	28.83	31.36	38.2		19.25	23.21
2Admin	24.56	34.08	20.99	25.46	18.98	14.33	23.46		51.95	45.54
3Depr	6.6	6.465	8.637	5.643	15.31	18.31	2.465		0	0
4Fin	1.654	1.081	0.851	0.708	0.942	3.278	1.026		11.08	6.681
5OtherExp	38.83	36.88	36.01	34.4	26.38	28.47	26.93		19.87	22.79
6B/D	0.944	0.898	0	0	0	0	5.455		0	0
Total Exp	90.75	97.19	106.2	97.64	90.45	95.76	97.54		102.1	98.22
NetIncome	9.249	2.807	-6.16	2.362	9.55	4.245	2.465		-2.15	1.781

School #	6		7		8		9		10	
%Net Rev's-Common Size										
FYE	2002	2001	2003	2002	2002	2001	2003	2002	2003	2002
Net Rev	100	100	100	100	100	100	100	100	100	100
1 S&W	21.87	23.98	30.91	31.9	28.87	20.08	19.92	21.14	39.24	33.35
2Admin	22.01	10.33	19.63	25.49	17.31	21.68	15.78	15.33	11.89	13.45
3Depr	8.163	4.148	3.139	3.291	2.067	1.956	4.366	5.643	3.916	3.618
4Fin	3.658	2.123	1.209	0.289	1.109	0.409	14.59	15.85	0.83	0.815
5OtherExp	56.93	64.21	42.2	35.74	48.24	53.63	47.74	48.27	34.62	39
6B/D	0.363	0.782	0	0	0.579	1.442	0.479	0	0	0
Total Exp	113	105.6	97.09	96.71	98.17	99.19	102.9	106.2	90.49	90.23
NetIncome	-13	-5.47	2.908	3.285	1.825	0.811	-2.87	-6.23	9.508	9.766

Basis = % of Net Revenues

Note:

The underlying formula for an income statement is:

$$\text{Net Revenues} - \text{Total Expenses} = \text{Net Income}$$

This formula holds true whether the income statement is expressed in actual monetary units, such as the Uganda schilling, or in percentages of net revenues, as shown in this table.

(See key on next page.)



Key to abbreviations used in Table F10.1:

%Net Rev-s = Percentage of Net Revenues

FYE = Fiscal Year End

Net Rev = Net Revenues

1S&W = Salaries and Wages Expenses

2Admin = Administrative Expenses

3Depr = Depreciation Expense

4Fin = Financial Expenses (Bank Charges, Interest Expense, etc.)

5OtherExp = Other Expenses (all others that were not included in the above 4 expense categories or Bad Debts)

6B/D = Bad Debts (uncollectible accounts receivable written during the fiscal year)

Total Exp = Total Expenses

NetIncome = Net Income (Net Revenues – Total Expenses)

## Appendix F-11

## Industry Averages—Common Size Statements

Table F11.1

Industry Averages—Common Size Statements based on Balance Sheet Percentages

	% Total Assets Industry Averages	Range	
		Low Value	High Value
Quick A	3.334239	0	6.058105
CA	5.364229	0.070155	14.03642
FA	94.63577	85.96358	99.92984
Tot A	100		
CL/TotL	74.01619	4.555699	100
LTL/TotL	25.98381	0	95.4443
Cap/OE	114.3154	58.86316	295.4692
RE/OE	-6.14962	-195.469	40.74825
TotL/TotLOE	44.2894	2.108656	91.34469
TotOE/TotLOE	55.7106	8.655308	97.89134
TotL+OE	100		

Note: In constructing common size balance sheets, all figures are expressed as a percentage of Total Assets. The accounting equation demands that Total Liabilities + Total Owners' Equity must equal Total Assets.

Key to abbreviations used in Table F11.1:

Quick A = Quick Assets

CA = Current Assets

FA = Fixed Assets

CL/TotL = Current Liabilities / Total Liabilities

LTL/TotL = Long-term Liabilities / Total Liabilities

RE/OE = Retained Earnings / Owners' Equity

TotL/ TotLOE = Total Liabilities / (Total Liabilities + Total Owners' Equity)

TotOC/TotLOE = Total Owners' Equity / (Total Liabilities + Total Owners' Equity)

TotL+OE = Total Liabilities + Total Owners' Equity

Table F11.2  
Industry Averages—Common Size Statements based on Income Statement Percentages

	% Total Revenues Industry Averages	Range	
		Low Value	High Value
Net Rev	100		
1 S&W	27.32	17.8	39.67297
2Admin	22.75	10.3	51.94629
3Depr	5.46	0	18.31379
4Fin	3.589	0.29	15.85216
5OtherExp	39.01	19.9	64.20562
6B/D	0.576	0	1.441876
Total Exp	98.71		
NetInc	1.29		
TotExp+NI	100		

Note: In constructing common size income statements, all figures are expressed as a percentage of Net Revenues. The basic mathematical equation upon which the income statement is constructed is: Net Revenues – Total Expenses = Net Income.

Key to abbreviations used in Table F11.1:

Net Rev = Net Revenues

1S&W = Salaries and Wages Expenses

2Admin = Administrative Expenses

3Depr = Depreciation Expense

4Fin = Financial Expenses (Bank Charges, Interest Expense, etc.)

5OtherExp = Other Expenses (all others that were not included in the above 4 expense categories or Bad Debts)

6B/D = Bad Debts (uncollectible accounts receivable written during the fiscal year)

Total Exp = Total Expenses

NetInc = Net Income (Net Revenues – Total Expenses)

TotExp+NI = Total Expenses + Net Income (this Total is a check figure and must equal Net Revenues)

## Appendix F-12

### Ratio Analysis—Calculability & Modifications Necessary for LDC Setting

As noted in Chapter 3, ratios were identified that are commonly used for financial statement ratio analysis in service oriented entities in the business world. Ratios that specifically applied only to corporate forms of business were eliminated. The remaining ratios, those that it appeared could be used to assess financial health of secondary schools in Uganda, were presented in Appendix D. Research Question# 2 recognizes that when applied to the actual data sets, it may be discovered that some of these ratios are easily calculated, but others may be impossible or may require some modification. The following challenges were encountered when applying the ratios presented in Appendix D.

1. The author discovered that not all elements necessary for calculation of a specific ratio were included or specifically delineated in the revenue report financial statements. Examples include “interest expense” and “tax expense.” Interest expense for some of the schools appears to be included in “finance charges.” However, finance charges may also include bank fees such as overdraft fees and other bank charges, unrelated in the strict sense to actual interest. The author made the choice to eliminate any ratios that require interest expense in their calculation
2. There is no distinction made in the revenue reports as to fixed charges versus variable charges. While some of these may be logically classified according to the author’s experience, without the specific classification of these charges by someone close to the source (school financial administrator or auditor), the author determined that ratios involving fixed or variable charges should not be performed.

3. Gross Profit is calculated as Net Sales – Cost of Goods Sold. This is a key figure for business entities that manufacture, wholesale, or retail goods. It was initially thought that this could not apply to service organizations such as schools. However, one of the revenue reports does present its income statement in the format that identifies gross profit. The titles of accounts led the author to assume that the “goods sold” here refers to the direct costs, mainly food, of boarding operations. With only one school reporting in this manner, all ratios involving cost of goods sold or gross margin have been eliminated from the calculations performed in this study.
4. Current versus long-term liabilities (debt). Long-term liabilities were identified for only three of the nine schools which had balance sheets. This is not a common situation in more affluent countries where fixed assets are often financed by long-term debt. In an LDC, it is likely that there is less access to long-term financing option, such as mortgages. Given the small number of schools with long-term debt, ratios that cover this can only be applied on a very limited basis. Despite the relatively small number of schools that have long-term debt, these ratios will be left in the mix for further discussion. In the author’s view, it is highly likely that as LDCs advance financially, long-term debt will become more and more common and therefore must be examined as a critical factor in financial statement analysis. Further attention may be given to this in overall financial analysis for each school.
5. Solvency versus leverage. It appears that several of the formulas for leverage require essentially the same elements as formulas given for solvency. Although the terms used vary slightly, “a rose by a different name remains the same.” Solvency focuses

on the entity's ability to meet its long-term obligations. Leverage is the use of debt to secure productive assets (Albrecht et al., 2005) or compares debt to net worth.

As presented in Appendix D, the following ratios were found in the literature review.

Appendix D provides an explanation of each formula and citations. The formulas are presented here in Tables F12.1 through F12.9 with brief discussions about whether or not each formula can be calculated using the revenue report data. Modifications that must be made in order to calculate the ratio are also noted.

Table F12.1

<i>Profitability Ratios</i>		
Ratio	Formula	Useable? Modifiable?
Percent Return on Net Sales	$\text{Net Profit} / \text{Net Sales Revenue}$	Useable without modification
or	or	
Profit Margin	$\text{Net Income} / \text{Sales}$	Essentially these are the same calculation, but with different names on the ratio and its component parts.
Gross Profit to Net Sales	$\text{Gross Profit} / \text{Net Sales Revenue}$	Unusable. Only 1 school presents data that could be used to calculate this.
Break Even Point (BEP)	$\text{Total Operating Expenses} / \text{Average Gross Margin Percentage}$	Unusable. Schools do not consistently classify their expenses as operating or non-operating expenses. Also, no disclosure as to fixed or variable costs that are often associated with BEP calculations.
Margin of Safety	$(\text{Current Sales level} - \text{BEP}) / \text{Current Sales Level}$	Unusable. No BEP can be calculated.
Ratio of Administrative Expenses to Sales	$\text{Total General and Administrative Expenses} / \text{Gross Sales}$	Unusable as schools do not classify expenses according to general and administrative categories. Groupings could be assigned and calc'd by researcher, but this would be largely unreliable.
Return on Equity	$\text{Net Income} / \text{Average Stockholders' Equity}$	Usable if redefined as $\text{Net Income} / \text{Average Owners' Equity}$ , which is essentially the same thing, but in a non-corporate form.

Table F12.2  
*Efficiency Ratios*

Ratio	Formula	Useable? Modifiable?
Return on Total Assets	$(\text{Net Income} + (\text{Interest Expense} \times (1 - \text{tax rate}))) / \text{Average Total Assets}$	Unusable. Cannot be calculated from the data given. Interest Expense & tax rates are not consistently disclosed in the revenue reports.
or	or	
Return on Assets (ROA)	$(\text{Net Income} + \text{After-tax Interest Cost}) / \text{Average Total Assets}$	
or	or	
ROA	EBIT / Ave. Tot Assets	
Total Asset Turnover	Sales/Total Average Assets	Unusable. Cannot be calculated from the data given. Interest Expense & tax rates are not consistently disclosed in the revenue reports.
Fixed Assets Turnover	Sales / Ave. Fixed Assets	Usable. Sales is equated to net revenues from the income statements; fixed assets is found on the balance sheets.
Average Collection Period (Age of Receivables)	$365 \text{ days} / \text{Accounts Receivable Turnover}$	Unusable. This would be an instructive ratio, but credit sales (revenue) is not disclosed on any of the income statements or in the notes to the financial statements. The closest related figure would be the balance of accounts receivable which represents those amounts of credit sales that remain uncollected at the end of the fiscal year.
or	or	
Ave. collection period	Ave .AR /Ave. Cr sales per day	



Table F12.2 (continued) Efficiency Ratios

Ratio	Formula	Useable? Modifiable?
Payables Turnover	Total Purchases / Ending Accounts Payable Balance (RA) or Sales / Ave AP (W)	Unusable. Could be informative for boarding schools that consider purchases of food for boarders. One school does show this. The others do not.
Days AP Outstanding (R) or Average Number Days Payables Outstanding (W)	365/ AP Turnover	Unusable. Not enough detail is provided in the revenue reports to calculate.
Ratio of Depreciation to Fixed Assets	Total Accumulated Depreciation / Total Gross Fixed Assets	Usable. All schools have fixed (depreciable) assets. 9 of the 10 revenue reports provide necessary data.
Working Capital Turnover	Sales / Average Working Capital	Usable. Figures from both the income statement and the balance sheet are used.

Table F12.3

<i>Liquidity Ratios</i>		
Ratio	Formula	Useable? Modifiable?
Current Ratio or Working Capital Ratio (W)	Current Assets / Current Liabilities	Usable. The name "current ratio" will be used in further discussions.
Quick (Acid Test) Ratio	(Cash + Marketable Securities + Current Receivables) / Current Liabilities	Usable. However only 10 of the 17 balances sheets contained in the revenue reports have quick assets that differ from current assets.
Cash Ratio or Cash Ratio	(Cash + Short-Term Securities) / Current Liabilities or (Cash + Marketable Securities) / Current Liab's	Usable. None of the 10 revenue reports disclose short-term or marketable securities, so the numerator will be cash only
Defensive Interval	365 X (Cash + Marketable Securities + Accounts Receivable) / Projected Expenditures	Unusable. Projected expenditures are included for only 1 school.

Table F12.4

<i>Solvency Ratios</i>		
Ratio	Formula	Useable? Modifiable?
Long-Term Debt to Equity	Total Long-Term Debt / Total Owners' Equity	Usable
Long-Term Debt to Assets	LT Debt / Total Assets	Usable
Long-Term Debt to Tangible Assets	LT Debt / Total tangible Assets	Usable if Tangible Assets are defined as and equated to Net Fixed Assets
Capital Expenditure Ratio	Cash from Operations (CFO) / Capital Expenditures	Unusable. Only 3 of the 10 revenue reports discloses CFO.
CFO to Debt Ratio	CFO / Total Debit	Unusable. Only 3 of the 10 revenue reports discloses CFO.

Table F12.5

<i>Leverage Ratios</i>		
Ratio	Formula	Useable? Modifiable?
Total Liabilities to Total Assets	Total Liabilities / Total Assets (W)	Usable.
Debt to Equity	Total Debt/ Total Equity (W)	Usable
Debt to Equity Turnover	Total Liabilities / Stockholders' Equity	Usable. However, this is essentially the same calculation as the Debt to Equity ratio. Eliminate it.
Debt to Total Capital	Total Debt (Current + Long-Term) / Total Capital (Owner's Contributions + Retained Earnings)	Usable. Content is redundant with Debt to Equity ratio. Use that and eliminate this.

Table F12.6  
*Cash Flow Sufficiency Ratios*

Ratio	Formula	Significance
Cash Flow Adequacy	Cash from Operations / (Long-Term Debt Paid + Funds from Assets Purchased + Dividends Paid)	Unusable. Cash from operations is available for only 3 of the 10 schools.
Long-Term Debt Repayment	Long-Term Debt Payments / Cash from Operations	Unusable. Cash from operations is available for only 3 of the 10 schools
Debt Coverage	Total Debt / Cash from Operations	Unusable. Cash from operations is available for only 3 of the 10 schools
Cash to Working Capital	(Cash + Short-Term Marketable Securities) / (Current Assets – Current Liabilities)	Usable. No short-term securities are disclosed in the revenue reports so cash will be the only component in the numerator.

Table F12.7  
*Cash Flow Efficiency Ratios*

Ratio	Formula	Significance
Cash Flow to Sales	Cash Flow from Operations / Sales	Unusable. Cash from operations is available for only 3 of the 10 schools.
Cash Flow Return on Assets	Cash Flow from Operations / Total Assets	Unusable. Cash from operations is available for only 3 of the 10 schools.
Cash Flow from Operations	Cash Flow from Operations/Current Liabilities	Unusable. Cash from operations is available for only 3 of the 10 schools.
Fixed Charge Coverage Ratio (Cash Basis)	Adjusted Operating Cash Flow / Fixed Charges	Unusable. Cash from operations is available for only 3 of the 10 schools.
Times Interest Earned (Cash Basis)	Adjusted Operating Cash Flow / Interest Expense	Unusable. Cash from operations is available for only 3 of the 10 schools. In addition, interest expense is not clearly defined on most of the revenue reports.

Table F12.8

<i>Interest Coverage Ratios</i>		
Ratio	Formula	Significance
Times Interest Earned	Earnings Before Interest & Taxes (EBIT) / Interest Expense	Unusable. Cannot be calculated from the data given. Interest expense & taxes are not consistently disclosed in the revenue reports.
Fixed Charge Coverage	Earnings Before Fixed Charges and Taxes / Fixed Charges	Unusable. Cannot be calculated from the data given. Interest expense & taxes are not consistently disclosed in the revenue reports.

Table F12.9

<i>Asset Mix Ratio</i>		
Ratio	Formula	Significance
Asset Mix Ratio	Buildings and Equipment / Total Assets	Usable if modified slightly. This may be calculated as Fixed Assets (essentially the same but could have slightly different contents)/Total Assets. This utilizes data from the balance sheets.

This activity, identifying those formulas that could actually be calculated based on the data contained in the revenue reports of the 10 sample schools, shows that many of the standard formulas that are used in financial statement analyses cannot be used with this particular data set. The most pervasive problem lies not in the formulas themselves, but in the fact that many of the components necessary for calculation are simply not available in the majority of the revenue reports. Sixteen ratios were identified that could be calculated, some with minor modifications, using the revenue report data.

In carefully analyzing these 16 ratios, matching the components of their formulas with data available (assessing the relative magnitude or dearth of data), and then comparing them to each other, the author identified three ratios that are somewhat redundant. These three ratios were dropped from further analysis. A discussion of the three ratios follows.

1. Quick (Acid Test) Ratio  $[(\text{Cash} + \text{Marketable Securities} + \text{Current Receivables}) / \text{Current Liabilities}]$ . This liquidity ratio was found to be calculable. However, of the 17 balance sheets available for analysis (two years' worth of data for eight schools plus one year for one other school; the tenth school had no balance sheet data), 7 showed that those assets categorized as Quick Assets were identical to the assets categorized as Current Assets. Careful analysis of the remaining balance sheets' composition showed that none of the schools had Marketable Securities and there was very little difference between Current Assets, the numerator for the Current Ratio, and the numerator for the Quick Ratio. The Quick Ratio and the Current Ratio have the same denominator and essentially the same numeric numerators in this data set. Therefore, the Current Ratio was used while the Quick Ratio was eliminated from further analysis.
2. Debt to Equity Turnover  $(\text{Total Liabilities} / \text{Stockholders' Equity})$ . The formula for this ratio is essentially the same as the Debt to Equity ratio, so this ratio was eliminated from further calculations.
3. Debt to Total Capital  $(\text{Current Liabilities} + \text{Long-term Liabilities}) / (\text{Owner's Contributions} + \text{Retained Earnings})$ . This formula is also essentially the same as the Debt to Equity ratio, so it was also eliminated from further calculations.

Thirteen ratios remain that can be calculated using the revenue reports from the 10 sample schools. These ratios, along with their formulas, are presented in Appendix F-13 “The 13 Viable Financial Ratios.”

## Appendix F-13

### The 13 Viable Financial Ratios

Thirty-eight financial ratios commonly used in business analysis were identified and discussed in Appendix D. Appendix F-12 examined each of these 38 ratios in the context of the revenue report data set to determine which could actually be calculated. Sixteen ratios were identified as calculable. Further investigation led the author to eliminate 3 of the 16 on the basis of relative redundancy. The remaining 13 ratios (along with their formulas) were ultimately utilized in financial analysis for the 10 sample schools. The numeric results of these calculations are presented in Appendix F-14 “Cross-sectional Analysis—13 Financial Statement Ratios.”

#### 1. Profitability Ratios

- a. Profit Margin (Net Income/Net Total Revenues)
- b. Return on Equity (Net Income/Average Owners' Equity)

#### 2. Efficiency Ratios

- a. Fixed Asset Turnover (Net Total Revenues/Average Fixed Assets)
- b. Ratio of Depreciation to Fixed Assets (Total Accumulated Depreciation/Total Gross Fixed Assets)
- c. Working Capital Turnover (Net Total Revenues/Average Working Capital)

#### 3. Liquidity Ratios

- a. Current Ratio (Current Assets/Current Liabilities)
- b. Cash Ratio (Cash/Current Liabilities)



#### 4. Solvency Ratios

- a. Long-term Liabilities to Equity (Total Long-term Liabilities/Total Owners' Equity) However, only 3 of the 10 schools actually have long-term debt. This is very similar to the Debt to Equity leverage ratio.
- b. Long-term Liabilities to Fixed Assets (Total Long-term Liabilities/Net Total Fixed Assets) Only 3 of the 10 schools actually have long-term debt.

#### 5. Leverage Ratios

- a. Long-term Liabilities to Assets (Total Long-term Liabilities/Total Assets). This ratio is similar to the solvency ratio titled Long-term Liabilities to Fixed Assets. Again, only 3 of the 10 schools actually have long-term debt.
- b. Debt to Equity (Total Liabilities/Total Owners' Equity)

#### 6. Cash Flow Sufficiency Ratios. Most cannot be calculated. Reliable data for Cash from Operations is necessary for these calculations. This data is available for only 3 of the 10 schools. However, one ratio, Cash to Working Capital, does not require Cash from Operations in its calculation. Rather, it utilizes Cash as identified on the balance sheet. Each balance sheet in this sample lists Cash. Therefore, the Cash to Working Capital ratio is utilized as a measure for cash flow sufficiency.

- a. Cash to Working Capital (Cash/(Current Assets – Current Liabilities). Both of these components come from the balance sheet, rather than the cash flows statement.

#### 7. Cash Flow Efficiency Ratios. None will be calculated. Reliable data for Cash from Operations is necessary for these calculations. This data is available for only 3 of the 10 schools.

8. Interest Coverage Ratios. Will not be calculated. Interest expense is not clearly delineated on the income statements in the revenue reports.
9. Asset Mix Ratio
  - a. The Asset Mix formula was slightly modified. It was calculated as Fixed Assets/Total Assets.

In summary, of the 38 ratios presented in Appendix D, 16 ratios could be calculated from the data in the revenue reports, some with slight modifications. Of these, the above 13 ratios were calculated for the most recent year of data. Prior year data was utilized in calculating “average” amounts where indicated in the formulas. For example, Average Fixed Assets, the denominator in the Fixed Assets Turnover ratio, is calculated as the sum of Fixed Asset balance at the end of the most recent year plus the balance at the end of the prior year, divided by 2.

Comparisons for ratio analysis were conducted only between schools, i.e., inter-school rather than intra-school comparisons were made. This is referred to as “cross-sectional analysis.” The results of these calculations, utilizing the 13 ratios identified above, are presented in Appendix F-14, “Cross-sectional Ratio Analysis.”



## Appendix F-14

## Cross-sectional Analysis—13 Financial Statement Ratios

School	PrftMrgn	RetEquity	FA t/o	Depr/FA	WC t/o
1	0.092493	0.42933	3.191954	0.200014	-10.2195
2	-0.06162	-0.09354	1.297265	0.185137	-8.91566
3	0.095502	0.045937	0.468607	0.179369	-18.1772
4	0.024647	0.025117	1.031248	0.167464	86.46751
5	-0.02149	-0.24718	1.202385	0.133781	-6.29756
6	-0.12993	-0.12802	0.669232	0.125622	-2.08622
7	0.029084	0.077697	1.523194	0.125254	-7.36225
8	0.01825	0.229388	1.138905	0.174253	-15.9146
9	-0.02874	-0.07173	0.732752	0.067469	-2.22749
10	0.095077	--	--	0.130821	-

School	CurrntRto	CashRatio	LTL/Eqty	LTL/FA
1	0.201418	0.023058	0	0
2	0.557099	0.00973	0	0
3	0.070231	0.070231	0	0
4	1.218642	0.080765	0	0
5	0.080386	0.052698	11.48533	0.719868
6	0.043446	0.011284	0	0
7	0.384022	0.006856	0	0
8	0.327998	0.117007	8.545142	0.79785
9	0.019941	0.001679	1.333695	0.312301
10	--	--	--	--

School	Liab/Assts	Debt/Eqty	Csh/WC	AsstMix
1	0.404387	0.678943	-0.02887	0.918549
2	0.251956	0.336819	-0.02197	0.859636
3	0.03164	0.032674	-0.07554	0.997778
4	0.051148	0.053905	0.369394	0.937669
5	0.938492	15.25805	-0.0573	0.981346
6	0.370046	0.587418	-0.0118	0.983923
7	0.268031	0.366179	-0.01113	0.89707
8	0.911339	10.27888	-0.17412	0.949582
9	0.767979	3.309947	-0.00171	0.990857
10	--	--	--	--

## Key:

1. PrftMrgn = Profit Margin
2. RetEquity = Return on Equity
3. FA t/o = Fixed Assets Turnover
4. Depr/FA = Ratio of Depreciation to Fixed Assets
5. WC t/o = Working Capital Turnover
6. CurrntRto = Current Ratio
7. Cash Ratio = Cash Ratio
8. LTL/Eqty = Long-term Liabilities to Equity
9. LTL/FA = Long-term Liabilities to Fixed Assets
10. Liab/Assts = Total Liabilities to Total Assets
11. Debt/Eqty = Total Liabilities to Total Equity
12. Csh/WC = Cash to Working Capital
13. AsstMix = Asset Mix

Note: School 10 had no balance sheet information, therefore some ratios could not be calculated.



## Appendix F-15

## Ratio Analysis—Details of Seven Key Ratios

A profile is provided for each of the Seven Key Ratios. In addition to the eight information items identified in Chapter 3 for each ratio, also included here are findings regarding this ratio as it was used in the research project and comments about the findings.

*Profit Margin*

1. *Name of ratio grouping:* Profitability
2. *Intent or function of this ratio grouping:* Measure of operating success for a given period of time
3. *Name of specific ratio:* Profit Margin; also known as Return on Net Sales
4. *Formula for this ratio:* Net Income/Net Revenue
5. *Where the data for this ratio is found in the database:* Income Statement
6. *Use of this ratio:* This ratio compares the profit (or loss) with the revenues. It is the most common measure of profitability.
7. *Meaning/Interpretation of the ratio:* This ratio represents the portion of revenues that was not consumed by expenses. It indicates the business/school's "bottom line" as a proportion of its revenues. This is the most traditional measure of profitability. A negative value on this ratio indicates that the entity was not profitable for the fiscal year. A near zero value would indicate a "break even" situation where net revenues are completely consumed by expenses. This would indicate that it is impossible to finance future operations or expansions via current earnings. Fiscal viability is, in part, dependent upon the entity having a healthy, positive profit margin over many operating periods.

8. *Expected range of the ratio:* Although this may have a negative value, indicating an operating loss for the period, it is expected that positive values would be indicated. While there is no boundary for a lower limit, the value, by definition cannot exceed 1.0 on the high end. This, though illogical, would indicate that all revenues were also profit; in other words, this would be the profit margin if no expenses at all were present. A zero value would indicate no income or loss.

9. *Appropriateness of this ratio in LDC settings:* This is a valuable and widely accepted measure of profitability. A business entity cannot survive indefinitely if this ratio is negative or very low.

10. *Findings:*

a. *Range of ratio values found in this sample:* -0.12993 to 0.0955

b. *Industry average (mean), 10 schools, for this ratio:* 0.0113

c. *Standard deviation:* .074

d. *Significant correlation with other variables in the study:* This ratio was correlated at the .02 level with another key financial ratio, Return on Equity. This is an expected structural correlation. The two ratios have an identical numerator, Net Income. They are both included as key ratios as they pit this numerator against very different denominators which come from different financial statements.

11. *Discussion:* The range indicates loss rates of approximately 13% to profit rates of 10%. The industry average, .0113 indicates that these schools, as a whole, are not very profitable at this point in time. The average net income is only 1.1% of net revenues. This is an extremely low value compared to most other industries in the world. Taken by itself, this

indicates that secondary schools in this sample are not as profitable as they need to be to ensure long-term fiscal viability.

### *Return on Equity*

1. *Name of ratio grouping:* Profitability
2. *Intent or function of this ratio grouping:* Measure of operating success for a given period of time
3. *Name of specific ratio:* Return on Equity
4. *Formula for this ratio:*  $\text{Net Income} / \text{Total Owners' Equity}$
5. *Where the data for this ratio is found in the database:* Net Income is the bottom line on the Income Statement and Total Owners' Equity is found on the Balance Sheet.
6. *Use of this ratio:* This ratio measures profitability as compared to the investment the owners have made in the business/school. From an investment perspective, this may be the most important ratio in financial statement analysis.
7. *Meaning/Interpretation of the ratio:* A negative figure here means that there was a net loss for the period; the owners' lost on their investment. A zero would indicate no loss, no gain. A positive figure shows the magnitude of earnings in relationship to the owners' investments. World-wide, it is generally the owners' expectations of a positive return on their investment that draws them into business. Sustained positive returns on investment are vital to long-term viability of an organization. Few business owners could continue indefinitely to sustain negative or low level returns on their investments.
8. *Expected range of the ratio:* There are no lower or upper boundaries on this ratio. A 0 value would indicate no gain or loss and no return on investment for the period. A negative value indicates a loss and a positive value results from net income for the period.



Negative returns are unacceptable in the long run. A profitable, financially healthy school has a positive ratio. The higher the ratio, generally the greater the expectation of continued operations.

9. *Appropriateness of this ratio in LDC settings:* This ratio is of critical importance in LDC settings as it is in any industry. Long-term financial viability rests heavily on this indicator. It directly impacts owners' satisfaction with their investment and their perceptions about the institution as a whole.

10. *Findings:*

a. *Range of ratio values found in this sample:* -0.247 to 0.4293

b. *Industry average, 10 schools, for this ratio:* 0.0297

c. *Standard deviation:* .20285

d. *Significant correlation with other variables in the study:* This ratio was correlated at the .02 level with the financial ratio, Profit Margin. This is an expected structural correlation. The two ratios have an identical numerator, Net Income. They are both included as key ratios as they pit this numerator against very different denominators which come from different financial statements.

11. *Discussion:* The range on this ratio indicated a great amount of dispersion. This indicates that while the average return on owner's equity is 3%, some owners experienced a loss of 25% on their investment and one school earned 43% on their invested capital. This great variability suggests that an investment in a secondary school in the Mukono District may have considerable risk.

### *Current Ratio*

1. *Name of ratio grouping:* Liquidity
2. *Intent or function of this ratio grouping:* Measures the ability of an organization to meet its short-term obligations.
3. *Name of specific ratio:* Current Ratio (also known as the Working Capital Ratio)
4. *Formula for this ratio:*  $\text{Current Assets} / \text{Current Liabilities}$
5. *Where the data for this ratio is found in the database:* The Assets section and Liabilities section of the Balance Sheet found in the revenue report should contain this specific data.
6. *Use of this ratio:* This ratio is used both internally and externally. It is one of the most commonly used and widely recognized measures of short-term liquidity.
7. *Meaning/Interpretation of the ratio:* This ratio compares current assets with current liabilities. The mathematical difference between these two components is known as working capital. While working capital was not one of the financial ratios specified in this model for financial assessment, this ratio uses working capital components. A ratio of greater than 1.0 means that Current Assets exceed Current Liabilities, a positive indication that the company is in a liquid position, i.e., it has liquid assets to meet its obligations as they become due. The lower the ratio, the greater the concern that the entity may not be able to meet its short-term financial obligations.
8. *Expected range of the ratio:* This depends on the “experience base” and can only be established based on an analysis of data. However, theoretically, values for this ratio could range from zero to a very large positive number. Normal ranges, however, would be

more in the realm of perhaps 0.5 to 5.0. An unlikely (and unhealthy) zero value would indicate that the school has no cash or any other liquid assets.

*9. Appropriateness of this ratio in LDC setting:* This key ratio is extremely appropriate, relevant, and useful in LDC settings. A low Current Ratio indicates potential difficulties in meeting financial obligations. An extremely high ratio, on the other hand, may indicate inefficiency or stockpiling of current assets or inefficient leveraging activities.

*10. Findings:*

*a. Range of ratio values found in this sample:* .019941 to 1.218642

*b. Industry average, 10 schools, for this ratio:* 0.3226

*c. Standard deviation:* 0.38214

*d. Significant correlation with other variables in the study:* The Current Ratio showed significant correlations with the following variables:

(1) Size of school as expressed by total number of students:  $-.653$  at the  $.028$  significance level.

(2) Student/Teacher ratio:  $-.611$  at the  $.05$  significance level

(3) % Boarding Students:  $-.673$  at the  $.03$  significance level

*11. Discussion:* A current ratio of less than one means that the school does not have enough current assets to cover its current liabilities. This short-fall may be due to timing. It could be an indication of poor cash flow management. It may indicate that the school will have to use some short-term financing measure like a pre-arranged line of credit with a bank to secure the necessary cash to meet its obligations. This can become a deadly cycle of borrowing to pay debt. The industry average indicates that schools, on the average, have about three times as many current liabilities as they have current assets to pay off their

liabilities. The industry average ratio appears to be dreadfully low according to traditional business finance. On an individual school basis, vertical analysis would show relative magnitude of financing charges. Horizontal analysis of financing expenses would indicate changes in the level of financing charges. Substantial increases may indicate that the school has liquidity problems and needs to look for a more permanent financing solution. Without other information which may refute the findings, the author suggests that all schools attempt to bring their current ratios to a value of more than 1.0. This means that current assets should exceed current liabilities. Currently, only one school meets this threshold.

#### *Long-term Liabilities to Equity*

1. *Name of ratio grouping:* Solvency
2. *Intent or function of this ratio grouping:* Indicates the entity's ability to meet its long-term debt obligations. This relates to long-term survivability or fiscal viability.
3. *Name of specific ratio:* Long-term Liabilities to Equity
4. *Formula for this ratio:* Total Long-term Liabilities/Total Owners' Equity
5. *Where the data for this ratio is found in the database:* Both the numerator and the denominator are found on the balance sheet.
6. *Use of this ratio:* This ratio is an expression of the school's capitalization. It may be used both internally by owners and externally by lending institutions.
7. *Meaning/Interpretation of the ratio:* Excessive debt may indicate potential insolvency. The higher the ratio, the greater the debt risk.
8. *Expected range of the ratio:* The lower bound of this ratio is 0, an indication that the school has no long-term debt. In this sample, two-thirds of the reporting schools have no long-term debt, so their ratio is 0. There is no upper bound on this ratio.

9. *Appropriateness of this ratio in LDC settings:* This ratio is the “quick look” at the school’s long-term financing strategy. A high ratio may be an indication that the school is having difficulty attracting investment capital. It appears that this may be the case with the all-female school in this sample. If true, there may be policy implications at the government level. Globally, there is a great emphasis on gender equality and equal access to education. A high long-term liabilities to equity ratio may indicate that there are forces at play that, in essence, are undermining this goal.

10. *Findings:*

a. *Range of ratio values found in this sample:* 0 to 11.48533

b. *Industry average, 10 schools, for this ratio:* 2.3738

c. *Standard deviation:* 4.4158

d. *Significant correlation with other variables in the study:* There were expected significant correlations between this ratio and two other ratios that have similar elements in their numerators: Total Liabilities to Total Assets, and Total Liabilities to Equity. In addition, an unusually high level of correlation, .959 at the .000 significance level, was found between this variable and a contextual variable, Percentage of Females. Additional discussion of this phenomena is found in Chapter 5 under the heading “Highly Leveraged Female Schools.”

11. *Discussion:* Only three of the nine revenue reports that included a balance sheet showed long-term liabilities. This indicates that three schools are financing their acquisitions, and perhaps their operations, through debt. The higher the ratio, the more highly leveraged the school and the greater the risk. The financial goal of a highly leveraged school must be to successfully earn profits that cover the interest expense on the debt as well as to

generate a cash flow to cover those interest payments plus the debt repayment and still leave enough to provide a reasonable rate of return on the owner's capital. If this goal is not met, the debt may be called in and the school could be forced to cease its operations. Depending on the laws of the country of operation, the owners may be personally liable should the school default on its debt obligations. Limited liability to the owners should not be taken for granted in an LDC setting.

#### *Total Liabilities to Total Assets*

1. *Name of ratio grouping:* Leverage
2. *Intent or function of this ratio grouping:* Leverage ratios examine the organization's debt structure. These ratios examine the position and prominence of debt in securing assets.
3. *Name of specific ratio:* Total Liabilities to Total Assets, often referred to as the Debt Ratio.
4. *Formula for this ratio:*  $\text{Total Liabilities} / \text{Total Assets}$
5. *Where the data for this ratio is found in the database:* Both elements of this ratio are found on the Balance Sheet.
6. *Use of this ratio:* This ratio indicates the portion of assets that are financed by debt. The debt may be viewed as a claim against the assets.
7. *Meaning/Interpretation of the ratio:* This ratio compares amounts owed to outside parties with the value of the school's assets. It shows the portion of assets financed through debt and may therefore be referred to as a capitalization ratio. The higher the ratio, the greater the potential financial risk. Horizontal analysis identifies changes over time and trends in the financial status of a school. If the debt ratio increases over time, this may be an

indication of expansion. Alternatively, it could be an indication that the school is borrowing to finance persistent losses.

8. *Expected range of the ratio:* This ratio is bounded on the lower end at 0, an indication that the school has no debt at all. There cannot be a negative value for this ratio. The upper bound is 1.0, an indication that all assets of the school are leveraged, and that there is no owners' equity at all. Both of these boundaries are unrealistic.

9. *Appropriateness of this ratio in LDC settings:* This ratio is of great use in an LDC setting as it is a measure of risk. Schools with a high debt ratio may have to charge more for their services in order to cover their financing charges and provide adequate cash flow to service their debt.

10. *Findings:*

a. *Range of ratio values found in this sample:* .03164 to .938492

b. *Industry average, 10 schools, for this ratio:* .4439

c. *Standard deviation:* .34770

d. *Significant correlation with other variables in the study:* This ratio positively correlates with the two other ratios that contain long-term liabilities in their formulas. This structural correlation is expected.

11. *Discussion:* The industry average here is skewed somewhat because only three schools had significant debt. Statistically it is correct. However, it is misleading. There is only one school in the sample with a ratio within .25 of the calculated mean of .44. Ratio values for the three schools are very high. Their ratio values of .77, .91, and .94 indicate that these three schools are in a position of high risk. The higher this ratio, the greater the

financial risk that the debt cannot or will not be repaid. This is a matter of considerable concern.

### *Total Liabilities to Equity*

1. *Name of ratio grouping:* Leverage
2. *Intent or function of this ratio grouping:* Leverage ratios examine the organization's debt structure. These ratios examine the position and prominence of debt in securing assets.
3. *Name of specific ratio:* Liabilities to Equity. Common name is Debt to Equity Ratio.
4. *Formula for this ratio:*  $\text{Total Liabilities} / \text{Total Equity}$
5. *Where the data for this ratio is found in the database:* Both elements of this ratio are found on the Balance Sheet.
6. *Use of this ratio:* The ratio compares debt with equity (the two means of securing or financing assets). It shows the relative position of each to the other.
7. *Meaning/Interpretation of the ratio:* From a creditor or lender's perspective, this ratio is a measurement of the lender's protection. It is also an indication of financial risk associated with the owner's capital. The greater the liability as compared to capital, the greater the interest expense that must be incurred and the greater the demands on cash flow to pay the interest and to retire the debt. Interest can greatly affect earnings in a negative manner. Lower earnings generally lead to a lower return on investment to the owners. Therefore, a higher debt to equity ratio indicates a greater level of risk to the owners.
8. *Expected range of the ratio:* The lower bound for this ratio is zero. There cannot be a negative value. A zero value would indicate the unlikely condition that the school has



no liabilities. This ratio has unlimited upper bounds. The higher the ratio, the greater the financial risk.

*9. Appropriateness of this ratio in LDC settings:* This ratio is not only appropriate, but critical in an LDC setting. It serves as a sort of “warning bell” for risk. A high Debt to Equity ratio indicates that the school must earn adequate income as well as generate steady cash flow to meet its debt obligations. It may also signal deeper concerns like poor owner/investor commitment to the school.

*10. Findings:*

*a. Range of ratio values found in this sample:* 0 to 15.25805

*b. Industry average, 10 schools, for this ratio:* 3.44336

*c. Standard deviation:* 5.52684

*d. Significant correlation with other variables in the study:* As expected, this ratio had high structural correlation with the two financial ratios that address long-term debt. The schools in this sample had extremely small amounts of current liabilities compared with their long-term liabilities. Therefore, long-term liabilities and total liabilities were very closely related.

*11. Discussion:* The statistics look a little odd here. In the absence of negative values, the standard deviation is larger than the mean value. This is a result of skewed data. Six of the nine schools for which this ratio could be calculated had ratios of less than 0.68. The three remaining schools had significant long-term liabilities which were respectively 3, 10, and 15 times as much as their equity. The concern here would be that 2 of these 3 schools may be leveraged beyond their abilities to repay the debts. This is a risky situation. It suggests that careful attention needs to be given to profitability, to cash flows, and to the

current ratio over the course of the life of the loans, so that debt obligations may be met as they become due.

The reader may question the inclusion of two very similar ratios as key ratios: (a) Long-term Liabilities to Equity, and (b) Total Liabilities to Equity. The denominators are identical, the numerators could be very close in value. For the three highly leveraged schools in this sample, these ratios are very similar. These two ratios, although similar, look at the role of debt from different perspectives; one addresses the role of long-term debt, while the other looks at overall debt. Both indicate risk.

#### *Asset Mix*

1. *Name of ratio grouping:* (This ratio is not included in a ratio grouping.)
2. *Intent or function of this ratio grouping:* (This ratio is not included in a ratio grouping.)
3. *Name of specific ratio:* Asset Mix Ratio
4. *Formula for this ratio:* Fixed Assets/Total Assets
5. *Where the data for this ratio is found in the database:* This data is found on the balance sheet.
6. *Use of this ratio:* This ratio compares non-current assets with total assets. This is an indication of *capital intensive* asset structure.
7. *Meaning/Interpretation of the ratio:* This ratio shows what portion of the total assets is tied up in fixed or productive assets. Fixed assets represent assets that are not consumed or used up within a fiscal year. In this school setting, fixed assets may include land, buildings, libraries and textbooks, computers, kitchen equipment, and beds. These

assets may also be referred to as Property, Plant, and Equipment. With the exception of land, these are depreciable assets.

8. *Expected range of the ratio:* This ratio has a lower boundary of zero which would indicate that there are no fixed assets in the school. The upper boundary is 1.0, an indication that the school has only fixed assets. Neither of these extremes is practical for a school setting. Schools are capital intensive. The author would expect these ratios to be in the 0.6 to 0.9 range.

9. *Appropriateness of this ratio in LDC settings:* This ratio is very appropriate for an LDC setting. A high value indicates a commitment to long-term operations. Schools in LDC settings, as elsewhere in the world, are capital intensive.

10. *Findings:*

a. *Range of ratio values found in this sample:* .88596 to .99085

b. *Industry average, 10 schools, for this ratio:* .9463

c. *Standard deviation:* .04752

d. *Significant correlation with other variables in the study:* Two correlations of significance were found. First, there was a .659 correlation at the .03 significance level with Percent of Boarding Students. This is logical. The more students that board at a school, the greater the investment the school must have in fixed assets such as dormitory buildings, sanitation and kitchen facilities, and eating and study areas. Second, there was a .870 correlation at the .001 significance level with the Revenue per Student variable. This is also a logical correlation. The greater the investment in fixed assets, the higher the charges must be to cover costs.

*11. Discussion:* This appears to be a fixed asset intensive (or capital intensive) industry. While there is an obvious necessity for great investment in fixed assets to run a school, this industry average may be too high to be financially healthy. This indicates that on the average, only about 5% of a school's assets are current assets. As previously noted, the current ratios for these schools appears to be extremely low. Without sufficient current assets, schools are forced to borrow to meet expenses and debt commitments as they become due. This practice significantly decreases the financial viability of any organization.



## Appendix F-16

## Seven Key Financial Ratios and Rankings

*Descriptive Statistics for Seven Key Financial Ratios*

	N	Minimum	Maximum	Mean	Std Dev
Profitability:					
Profit Margin	10	-0.13	0.10	0.0113	0.07393
Profitability:					
Return on Equity	9	-0.25	0.43	0.0297	0.20285
Liquidity:					
Current Ratio	9	0.02	1.22	0.3226	0.38214
Solvency:					
Long-Term Liabilities/Equity	9	0.00	11.49	2.3738	4.41584
Leverage:					
Total Liabilities/Total Assets	9	0.03	0.94	0.4439	0.34770
Leverage:					
Total Liabilities/Total Equity	9	0.03	15.26	3.4336	5.52684
Asset Mix:					
Fixed Assets/Total Assets	9	0.86	1.00	0.9463	0.04752

## Seven Key Financial Ratios by School with relative rankings

School	1.Profit Margin		2.Return on Equity		3.Current Ratio		4.LT Liabilities/Equity	
	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank
1	0.09249	3	0.429	1	0.2014	5	0	
2	-0.0616	9	-0.094	7	0.5571	2	0	
3	0.0955	1	0.046	4	0.0702	7	0	
4	0.02465	5	0.025	5	1.2186	1	0	
5	-0.0215	7	-0.247	9	0.0804	6	11.4853	1
6	-0.1299	10	-0.128	8	0.0434	8	0	
7	0.02908	4	0.078	3	0.384	3	0	
8	0.01825	6	0.229	2	0.328	4	8.54514	2
9	-0.0287	8	-0.072	6	0.0199	9	1.3337	3
10	0.09508	2	--	--	--			

School	5.Liabilities/Assets		6.Debt/Equity		7.Asset Mix	
	Ratio	Rank	Ratio	Rank	Ratio	Rank
1	0.404	4	0.6789	4	0.9185	7
2	0.252	7	0.3368	7	0.8596	9
3	0.032	9	0.0327	9	0.9978	1
4	0.051	8	0.0539	8	0.9377	6
5	0.938	1	15.258	1	0.9813	4
6	0.37	5	0.5874	5	0.9839	3
7	0.268	6	0.3662	6	0.8971	8
8	0.911	2	10.279	2	0.9496	5
9	0.768	3	3.3099	3	0.9909	2
10	--	--	--	--	--	--

## Appendix F-17

## 15 Variables, School Values, and School Rankings

School	PrftMrgn	Rank	RetEquity	Rank	CurrntRto	Rank	LTL/Eqty	Rank
1	0.092493	3	0.42933	1	0.201417963	5	0	
2	-0.06162	9	-0.09354	7	0.55709903	2	0	
3	0.095502	1	0.045937	4	0.070230768	7	0	
4	0.024647	5	0.025117	5	1.218641741	1	0	
5	-0.02149	7	-0.24718	8	0.080386	6	11.4853314	1
6	-0.12993	10	-0.12802	7	0.043446481	8	0	
7	0.029084	4	0.077697	3	0.384021749	3	0	
8	0.01825	6	0.229388	2	0.327998178	4	8.54514249	2
9	-0.02874	8	-0.07173	6	0.019940553	9	1.33369509	3
10	0.095077	2						
	Liab/Assts	Rank	Debt/Eqty	Rank	AsstMix	Rank	Rev/#totStd	Rank
1	0.404387	4	0.678943	4	0.918549186	7	546724.714	8
2	0.251956	7	0.336819	8	0.859635831	9	487231.439	9
3	0.03164	9	0.032674	9	0.997777899	1	766696.484	5
4	0.051148	8	0.053905	6	0.937669205	6	669242.308	7
5	0.938492	1	15.25805	1	0.981346251	4	880468.197	2
6	0.370046	5	0.587418	5	0.983922799	3	804090.184	3
7	0.268031	6	0.366179	7	0.897070122	8	323413.248	10
8	0.911339	2	10.27888	2	0.949581729	5	728228.571	6
9	0.767979	3	3.309947	3	0.990856602	2	970584.861	1
10							766825.855	4
	SchlAge	Rank	Tot#Studt	Rank	#StudUNEB	Rank	% Female	Rank
1	2	9	700	4	103	5	42.8571429	7
2	14	2	431	8	67	8	54.5243619	2
3	2	9	254	9	67	8		
4	5	6	208	10	68	7	44.7115385	6
5	3	8	1224	1	81	6		
6	6	4	978	3	152	1	49.0797546	4
7	5	6	537	7	60	10	52.141527	3
8	9	3	560	5	113	3	100	1
9	6	4	1050	2	118	2	46	5
10	36	1	550	6	104	4		
	%Boarding	Rank	S/T Ratio	Rank		UNEB mean	Rank	
1	100	1	32.55814	8		4.58252427	9	
2	42.69142	8	23.2973	6		4.70149254	8	
3			16.93333	3		3.86567164	10	
4	63.94231	7	11.88571	1		5.11764706	7	
5	92.64706	5	37.66154	9		5.62962963	2	
6	97.85276	3	28.34783	7		5.13157895	6	
7	89.75791	6	18.51724	4		5.73333333	1	
8	99.64286	2	16.23188	2		5.21238938	5	
9	94.7619	4				5.58474576	3	
10			20	5		5.46153846	4	



Key to abbreviations used above:

Seven Key Financial Ratios:

PrftMrgn = Profit Margin

RetEquity = Return on Equity

CurrntRto = Current Ratio

LTL/Eqty = Long-term Liabilities / Total Owners' Equity

Liab/Assts = Total Liabilities / Total Assets

Debt/Eqty = Debt to Equity

AsstMix = Asset Mix

Six Contextual Variables:

Rev/#totStud = Revenue per Student

SchlAge = Age of School

Tot#Studt = Number of Total Students

#StudUNEB = Number of Students taking the UNEB exam at each school

% Female = Percentage of students who are females

%Boarding = Percentage of students who are boarding students

S/T Ratio = Student to Teacher Ratio

UNEB Variable:

UNEB mean = mean UNEB score for students taking the exam at each school

## Appendix F-18

## UNEB scores—Comparisons between Sample and Population

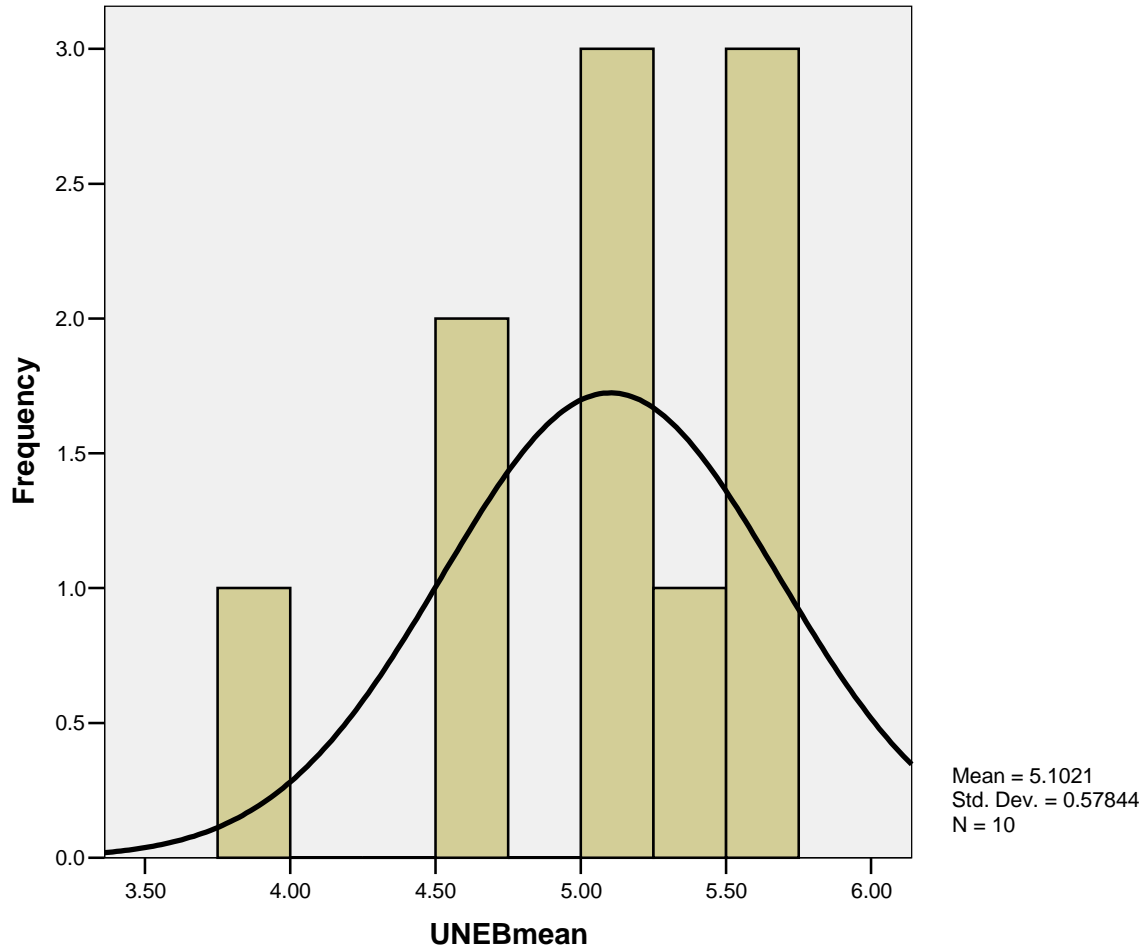
## 1. Descriptive Statistics for 10 schools (sample)

	N	Minimum	Maximum	Mean	Std. Deviation
UNB10mean	10	3.87	5.73	5.1021	.57844
Valid N (listwise)	10				

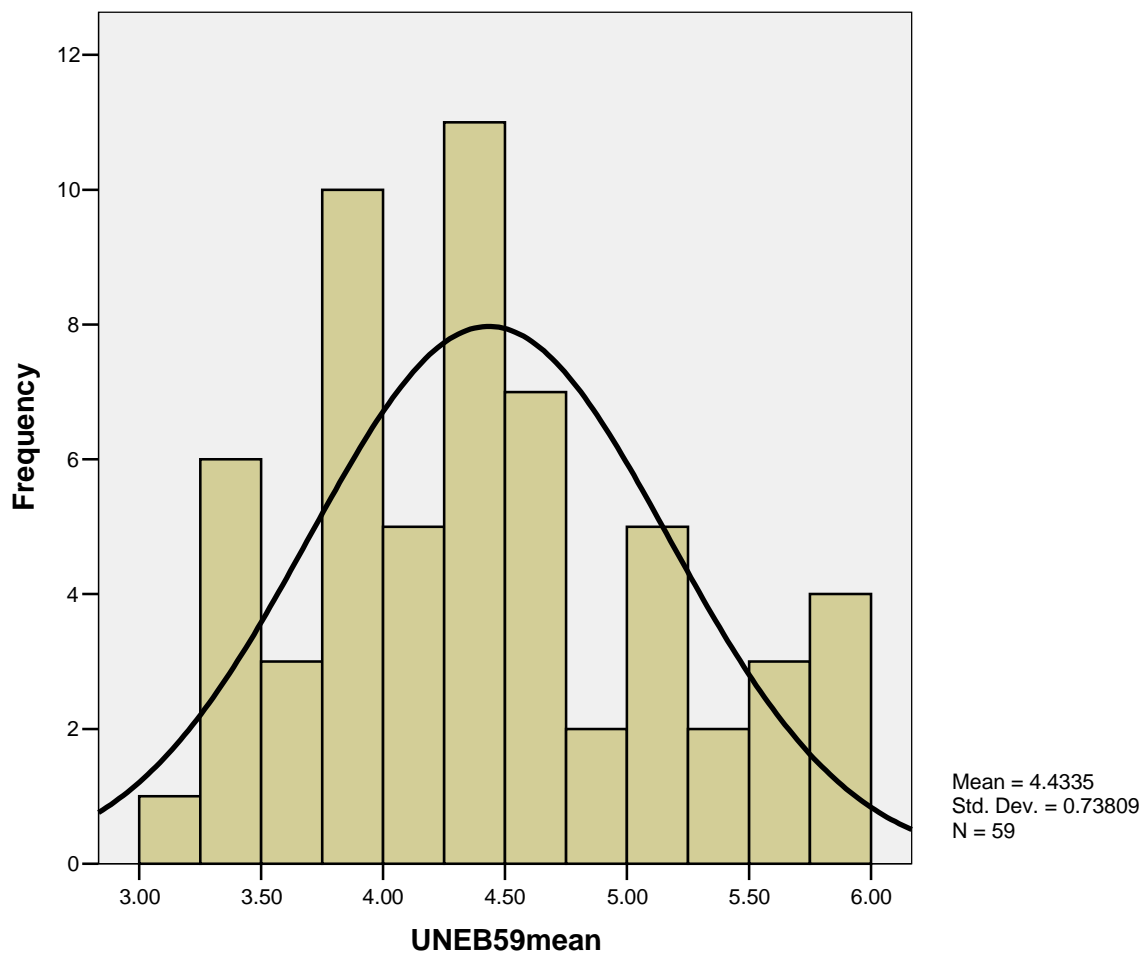
## 2. Descriptive Statistics for 59 schools (population)

	N	Minimum	Maximum	Mean	Std. Deviation
UNEB59mean	59	3.24	6.00	4.4335	.73809
Valid N (listwise)	59				

3. Histogram showing the distribution of UNEB scores for 10 schools



4. Histogram showing the distribution of UNEB scores for 59 schools



5. UNEB weighted average scores and rankings for the 10 revenue report schools

	WtdAve	Ranking
1	4.582524	9
2	4.701493	8
3	3.865672	10
4	5.117647	7
5	5.62963	2
6	5.131579	6
7	5.733333	1
8	5.212389	5
9	5.584746	3
10	5.461538	4

Mean 5.1021

6. Observations and comments regarding UNEB score distributions, means, and rankings follow:

a. The descriptive statistics show that the mean for the 10 school sample is higher than the mean for the entire population of 59 UNEB schools by .6686 ( $5.1021 - 4.4335$ ). The standard deviation, a measure of variability, is also larger for the 10 school sample. This is likely a result of a small and skewed sample.

b. The histogram graphs show that not only is the mean for the 10 school sample higher, but its distribution is also skewed with one low outlier school.

c. Only 1 of the 10 schools has a UNEB mean score that is lower (3.865672) than the population mean of 4.4335. The other nine schools lie in the top one-half of the population distribution. In fact, 5 from the sample are in the top 10 of the population and 9 are in the top 21 of 59 scores. The tenth school is an outlier at the low end, ranking number 47 of 59.

d. The above observations indicate that overall, schools in the sample population produce better UNEB test results than the population at large.

e. Rankings were used in overall analysis to assess the relative position of each school for this quality proxy variable.

## Appendix F-19

### Correlations between UNEB Means, Financial Ratios, and Contextual Variables

Bivariate Pearson correlation statistics were calculated using SPSS software. A total of 15 variables were included in the correlation statistics: 7 key financial ratios, 1 other financial ratio, 6 contextual ratios, and the UNEB mean scores. A one-tailed correlation statistic yielded 22 relationships at the .05 significance level. These correlations are discussed by category.

1. UNEB means with financial variables. These correlations directly address Research Question #3. Only one was significant: UNEB mean and Total Liabilities/Total Assets at .574.
2. UNEB means with contextual variables. One correlation of significance fell into this category. UNEB mean and Total # students at .530.
3. Financial variables with financial variables. High correlations in this category generally indicate that there is a structural correlation. Investigation of these correlations reveals that there is generally a common factor in the calculation of the ratio. Typically the numerator of the two ratios is identical or closely related or the denominator of the two ratios is identical or closely related.
  - a. Return on Equity and Profit Margin; .689 correlation, significance level .020 (structural correlation: same numerator).
  - b. Total Liabilities/Equity and Total Long-term Liabilities/Equity; .994 correlation at .000 significance level (structural correlation: denominators are identical; numerators are closely related as most schools have relatively few

current liabilities. Both ratios are retained because the first is a common measure of leverage, and the second is a common measure of solvency.)

- c. Total Liabilities/Total Assets and Long-Term Liability/Equity; .823 correlation at .003 significance level (structural correlation: numerators are closely related as most schools have relatively few current liabilities).
  - d. Total Liabilities/Assets and Total Liabilities/Equity; .858 correlation at the .002 significance level (structural correlation: numerators are identical and denominators, assets, and equity, must have a mathematical relationship given the accounting equation).
  - e. Asset Mix and Revenue per Student; .870 correlation at the .001 significance level (high correlation, but non-structural; suggests further exploration of the relationship).
4. Contextual variables with contextual variables. While these correlations revealed several interesting and statistically significant correlations, these are beyond the scope of this study. They will be identified but will not be explored in depth.
- a. Total Number of Students and Number of UNEB Students; .562 correlation at .045 significance level (structural correlation. The larger the school, the greater potential for more students to sit for the UNEBs).
  - b. Total Number of Students and Student/Teacher Ratio; .873 correlation at .001 significance level. (This correlation actually has a negative connotation. This means that the larger the school, the poorer or higher the Student/Teacher ratio, i.e., more students for every teacher.)

- c. Total Number of Students and Percent Boarding Students; .596 correlation at the .05 level (The larger the school, the greater the percentage of students that have boarding status.)
  - d. Number of UNEB Students and Percent Boarding Students; .610 correlation at the .05 level. (Total Number of Students correlates with Number of UNEB students as seen above. It is reasonable that they both correlate with % boarding status.)
  - e. Age of school and Percent Boarding Students; .660 correlation at the .037 significance level (Newer schools are more likely to have boarding students.)
5. Financial variables with contextual variables. These are of great interest and merit further exploration.
- a. Current Ratio and Total Number of Students; -.653 correlation at .028 significance level.
  - b. Current Ratio and Student/Teacher Ratio; -.611 correlation at .05 level.
  - c. Current Ratio and Percent Boarding Students; -.673 correlation at .034 significance level.
  - d. Long-term Liabilities/Equity and Percent Females; .959 correlation at the .000significance level.
  - e. Total Liabilities/Total Assets and Total Number of Students; .749 correlation at the .010 significance level.
  - f. Total Liabilities/Total Assets and Percent Females; .652 correlation at the .05 level.



- g. Total Liabilities/Equity and Total Number of Students; .565 correlation at the .05 level.
- h. Total Liabilities/Equity and Percent Females; .919 correlation at the .002 significance level.
- i. Asset Mix and Percent Boarding Students; .659 correlation at the .038 significance level.
- j. Revenue per Student and Number of UNEB students at a school; .532 correlation at the .05. level.(marginal correlation, no obvious explanation).

APPENDIX G

EXAMPLE OF COMPREHENSIVE FINANCIAL ANALYSIS: SCHOOL Y



## APPENDIX G

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## Appendix G

### Example of Comprehensive Financial Analysis: School Y

#### *Choosing School Y*

Analysis of a single school from the sample is provided as an example of how the financial analysis model identified in this research can be of benefit to an individual school.

School Y was chosen for the following reasons.

1. The auditor's statement gives a clean opinion on the financial statements of this school. Furthermore, this is the same auditor that prepared 2 other revenue reports of the 10 used in this study. This is an indication that the auditor is familiar with secondary schools in the Mukono District of Uganda. While a clean audit opinion does not guarantee accuracy of the statements, it does give the reader reasonable comfort in knowing that professionals have examined the statements and the underlying accounting records of the school.
2. The revenue report for this school did not contain obvious errors, such as addition errors.
3. The revenue report for this school is presented in a straight-forward manner and is less ambiguous and confusing than other schools.
4. The financial rankings of this school generally were at middle-range, suggesting that this may be a "typical" school.
5. Contextual rankings of this school are mostly at middle-range, but also include some outliers which suggest that there may be areas of interest for further investigation.

*Executive Summary of Comprehensive Financial Analysis of School Y*

An analysis of School Y was performed using a model for assessment of financial position developed for private secondary schools in the Mukono District of Uganda. School Y has been compared to industry averages. Financial data was obtained from the 2003 revenue report filed with the Uganda Revenue Authority. Contextual data was obtained via a 2003 resources survey conducted through Brigham Young University. UNEB scores were obtained from the MOES. A full report of findings is available. This executive summary covers only those items of greatest importance.

Analyses using seven key financial statement ratios and six supplemental ratios show that School Y is generally a mid-range financial performer. Two areas are noteworthy. First, cash and current assets appear to be marginally sufficient to meet liabilities. In comparison to the prior year, finance charges from short-term borrowing were greatly increased. Attention should be given to better cash flow management. Second, School Y has no long-term debt and therefore finances its assets primarily through owners' capital. This fiscally conservative policy, if maintained, leaves School Y in a favorable position regarding its long-term financial viability. With no long-term debt, it does not have to worry about large loan repayment requirements. However, if the school were to fall into difficult times financially, the question must be addressed as to whether or not all partners could or would step up to meet the school's financial commitments.

Two other factors combine to make a striking scenario. School Y has the lowest revenue per student of any school in the sample. It also has the highest UNEB scores in the sample. School Y, therefore, appears to be the best educational buy in the District. This is a noteworthy accomplishment, especially in light of the fact that the school is only five years

old. It would be important, however, to ascertain that all costs, fixed and variable, direct and indirect, are being covered by the amounts charged to students. Long-term fiscal viability dictates that all costs must be covered. The suggestion is made that a thorough investigation be made of the pricing structure for student tuition, fees, and other charges so that the school does not put itself in a difficult future financial position. Also, practices associated with UNEB testing merit further investigation. Survey data indicates that School Y sent 16 of its own students to other schools for O-level testing in 2003 while examining 50 students on its own premises. Were the poorest students sent elsewhere? Is the UNEB score, therefore, an unrealistic measure of quality of education offered by School Y?

Overall, School Y appears to be in a solid financial position currently. Its status as “best educational value” will support its overall viability in this demand-driven market. Sound financial practices, particularly in the area of cash management, are needed to sustain its long-term fiscal viability.

#### *The Analysis Process*

Analysis of School Y was performed using the financial assessment model presented in Chapter 5, Table 5.1. This table is reprinted here for the reader’s reference ease.

#### *Ratio Analysis and Cross-sectional Analysis*

The analysis of School Y was performed in the order suggested by the financial assessment model. However, the first two operations, ratio analysis of the individual school and cross-sectional analysis, which compares individual school ratios to industry standards and other schools within the industry (shown as rankings), are presented side by side in Table G.1 for the reader’s convenience. Interpretation and comments follow the statistical data.



Table 5.1

*Model for Financial Assessment Using Business Analysis Tools*

Analysis Tool	Application
1. Ratio analysis of the individual schools	a. Calculate and study the results of the seven key ratios. b. Other financial ratios may be explored if necessary.
2. Cross-sectional analysis using the ratios of the individual schools	a. Compare ratios between schools. b. Industry average ratios may be calculated.
3. Vertical analysis of the individual schools	a. Calculate financial statement components' relative percentages. c. Investigate internal aberrations.
4. Common size statements	a. Common categories may be developed for financial statement summaries and comparisons with other schools. e. Industry average percentages may be calculated.
5. Horizontal analysis of individual schools	a. Calculate activity level changes between fiscal years. b. Investigate internal trends. f. Comparisons may be made between schools. g. Industry averages may be calculated.
6. Other financial analyses as dictated by the setting	

Table G.1

*Ratio Analysis of the Individual School and Cross-sectional Analysis*

	School Y	Ranking	Industry Average
1 Profit Margin	0.0290844	4 of 10	0.011328249
2 Return on Equity	0.0776973	3 of 9	0.029666736
3 Current Ratio	0.3840217	3 of 9	0.322575829
4 Long-term Liabilities to Equity	0	4 of 4	2.373796555
5 Total Liabilities to Total Assets	0.2680314	6 of 9	0.443890786
6 Total Liabilities to Total Equity	0.3661788	7 of 9	3.433645263
7 Asset Mix	0.8970701	8 of 9	0.946267736

The following comments are offered on findings of the ratio and cross-sectional analysis.

1. Profit Margin. This indicates that the school has net income of about 3% of net revenues. Positive income and a ranking of 4 out of 10, indicate that this school is doing fairly well compared to the other schools. A high figure is desirable with this ratio.
2. Return on Equity. A return of almost 8% on owner's equity is respectable, even in a global setting. Many investors would be pleased to receive an 8% annual return on their investments, especially if this return could be sustained over a long period of time. A high figure is desirable for this ratio.
3. Current Ratio. A current ratio of less than 1.0 indicates that the current liabilities exceed current assets. This is referred to as negative working capital and is often a cause for concern in a global context. Negative working capital indicates that the entity may be in a scramble to come up with liquid assets to meet their obligations. In

comparison to the other schools in this study, this is one of the better/higher current ratios, 3<sup>rd</sup> of 9 ranked schools. The author is concerned that although this value looks “normal” for this sample, it is likely that almost every school in the sample is faced with a challenge. Only one school had positive working capital. Working capital, as measured by the current ratio, could be an area of near-universal financial concern for secondary schools in the Mukono District. A high figure is desirable for this ratio.

4. Long-term Liabilities to Equity. This school has no long-term debt. Therefore, this ratio is zero. Only three schools in the sample have long-term debt. School Y is in a very positive solvency position. Survey responses indicate that the school has had limited debt in the past, but it has been retired. A low figure is desirable for this ratio.
5. Total Liabilities to Total Assets. This relatively low ranking, 6<sup>th</sup> of 9, indicates that this school has less debt, comparatively, than most schools in the District. Liabilities represent claims against assets. Therefore, another way to view this ratio is that 27% of the assets are leveraged. This relatively low figure indicates that the school is not at great risk for default on debt. It may be a reflection of risk-averse owners. A low ratio is desirable for this ratio.
6. Total Liabilities to Total Equity. If this ratio were inverted, it would show that equity is approximately three times as large as the debt. This figure, 0.366179, is substantially lower than the industry average of 3.4336. From a risk perspective, this is a very good position to be in. This indicates that this school is able to finance its assets and operations, for the most part, via owner financing. A low ratio is desirable for this ratio.

7. Asset Mix. Percentage-wise, this school has fewer assets tied up in fixed assets (land, buildings, etc.) than most other schools in the sample. The presumption is that this leaves the school with more “working capital assets.” The industry average indicates that about 95% of most school’s assets are in fixed assets. This lack of liquid assets is actually a concern for the industry. This school seems to be in a better position than most of the other schools.

The second suggested step in ratio analysis is the exploration of supplemental ratios. As an illustration of possible ratios that could be included in this phase of the analysis, six other financial ratios were calculated for School Y. The results of these calculations are shown in Table G.2. Following the table, a discussion is provided for each of the six ratios.

Table G.2

*Supplemental Ratio Analysis of the Individual School and Cross-sectional Analysis*

	School Y	Ranking	Industry Average
1 Fixed Asset Turnover	1.5231942	3 of 9	1.25061592
2 Depreciation Expense to Fixed Assets	0.1252541	2 of 10	0.148918529
3 Working Capital Turnover	-7.362247	5 of 9	1.696336267
4 Cash Ratio	0.0068559	8 of 9	0.041478561
5 Long-term Liabilities to Fixed Assets	0	4 of 4	0.203335456
6 Cash Flow Sufficiency	-0.01113	3 of 9	-0.001449377

1. Fixed Asset Turnover. This ratio compares revenues with fixed assets. It measures the efficiency of the long-term capital investment (fixed asset investment). The higher the ratio, the more efficiently the assets are being used. The numeric value suggests that the revenues are about one and one-half times the value of the fixed assets. The ranking of third out of the nine schools for which this ratio was calculated, suggests that this is a better performance than most.

2. **Depreciation to Fixed Assets.** This efficiency ratio is calculated as total accumulated depreciation to total gross fixed assets. It represents that portion of the fixed assets that has been “used up.” A ranking of second of ten could be a concern, indicating that the assets of this school may be old as compared to other schools in the sample. However, it is important to remember that most of the schools in this sample are very new/young schools. This particular school was established in 1998; it was only five years old in 2003, the data collection year. A ratio of 0.125254 would indicate, by extrapolation, that approximately 1/8 of the original cost of the fixed assets has been used up in five years. Hence, the fixed assets should have about 35 years of useful life left. This is not a precise analysis, but rather a rough estimate as indicated by the numbers.
3. **Working Capital Turnover.** This ratio is a measure of efficiency. It compares revenues with average working capital. The numbers shown are actually meaningless. The negative sign comes from the fact that the school has negative working capital. Its current liabilities exceed its current assets. This is an uncommon situation in most industries. However, 9 of the 10 schools in this sample showed negative working capital. This is seen as a very unhealthy situation for these nine schools.
4. **Cash Ratio.** This is a liquidity ratio that compares cash and short-term securities (if any) to current liabilities. In this setting, cash is the most prevalent of the current assets, so for most of the schools in the sample, this figure is closely related to the current ratio. However, in this school, the cash ratio is very tiny, suggesting that cash availability could be a grave concern.

5. Long-term liabilities to fixed assets. This school does not have long-term liabilities. This ratio, 4th of 4, matches this school with the other non-leveraged schools.
6. Cash flow sufficiency. This ratio compares cash to working capital. Both the school's position on the ratio and the industry as a whole seem to be extremely low. Cash management could be a critical issue.

#### *Vertical Analysis of the Individual School*

A vertical analysis of the income statement for School Y is shown in Table G.3. In vertical analysis, all figures on an income statement are expressed as a percentage of revenues, which in this case is titled "school fees." The largest expense category for this school is salaries and wages at almost 30% of revenues. This appears to be reasonable, but will be compared with the industry average in the common size statement phase of analysis.

The majority of students at this school are boarding students (482 of 537 students or 90%), so it is not unexpected that foodstuffs are the second largest expense category at 19%. The remainder of expenses range from 6% for exam expenses down to .05 of 1% for burial and condolences, none of which appears to be of particular concern. Total expenses claimed 97.1% of revenues, leaving a profit equal to 2.9% of revenues. There is nothing on this vertical analysis of School Y that would alert the analyst to aberrations or financial difficulties.

#### *Common Size Statements*

For purposes of comparison, percentage figures from individual schools are combined into categories common to all schools in the industry. The individual school is then compared with the industry average. Comparative figures are presented in Table G.4 for the balance sheet of School Y.

Table G.3

*Vertical Analysis of Income Statement, School Y*

	Percent of Revenues
Income	
School Fees	100
Expenses	
Food Stuffs	19.38244
Stationery & Printing	2.570263
Uniforms	3.441527
Burial & Condolences	0.048079
Transport & Travel	7.71479
Fire Wood	2.246176
Salaries & Wages	29.65955
Water	1.342754
General Repairs/Maint	0.83997
Staff Accommodations	1.387666
Games & Sports	1.137195
Students Med Expenses	2.841894
Electricity	1.779149
Entertainment	0.088903
Cleaning & Sanitation	1.101093
Staff Welfare	1.247172
Clubs & Seminars	0.882636
Exam Expenses	6.255495
Phone & Postage	0.527428
Lighting	0.405302
Security	1.112436
Advertising	1.429526
Compound Maintenance	0.830872
Bank Charges	1.209067
Audit Charges	0.575795
Repairs & Renovations	2.756158
Church Expenses	0.085506
Practical Materials	1.053302
Depreciation—Fixed Assets	3.139419
Total Expenses	97.09156
Profit/Loss	2.90844

Table G.4

*Balance Sheet, School Y* (All figures are expressed as a percentage of Total Assets.)

	2003	Industry Averages
Quick Assets	6.058105	3.334239
Current Assets	10.29299	5.364229
Fixed Assets	89.70701	94.63577
Total Assets	100	100
Current Liabilities/Total Liabilities	100	74.01619
Long-term Liabilities/Total Liabilities	0	25.98381
Owners' Capital/Total Owners' Equity	100	114.3154
Retained Earnings/Total Owners' Equity	--	-6.14962
Total Liabilities/Total Liabilities + Total Owners' Equity	26.80314	44.2894
Total Owners' Equity/Total Liabilities + Total Owners' Equity	73.19686	55.7106

This comparative presentation reveals that School Y has proportionately more liquid assets and fewer fixed assets than the industry average. Its current liabilities are at the highest possible level, 100% of liabilities. There is no long-term debt. This is the most conservative of financing methods—owner financing with no long-term debt.

A common size income statement for School Y is presented in Table G.5, along with industry average comparisons. All figures are expressed as a percentage of net revenues. This comparison reveals that School Y's salaries and wages expense, as a percentage of net revenues, is slightly higher than the industry average. The catch-all category, other expenses, is also slightly higher. However, the school had no bad debt expense, suggesting that School Y has collected all of its accounts receivable or that it does not extend credit to its students—all students must pay their tuition and fees in full at the time of enrollment. School Y's net income, as a percent of revenues, is more than double the industry average, a situation that can only be seen as positive.



Table G.5

*Income Statement, School Y* (All figures are expressed as a percentage of Net Revenues.)

	2003	Industry Averages
Net Revenues	100	100
Salaries & Wages	30.90672	27.324
Administrative Expenses	19.63199	22.75024
Depreciation Expense	3.139419	5.460212
Finance Charges	1.209067	3.588795
Other Expenses	42.20436	39.00687
Bad Debt Expense	0	0.57591
Total Expenses	97.09156	98.70602
Net Income	2.90844	1.299093

#### *Horizontal Analysis*

Horizontal Analysis examines the change in financial statement line items or categories from one year to another. This is also known as trend analysis and may reveal positive or negative changes in financial composition. Balance sheet figures represent percentage changes between fiscal years 2002 and 2003. School Y's changes are presented in Table G.6 along with industry averages for comparative purposes. Commentary follows the numeric presentation.

It appears that School Y is extremely stable in terms of change compared to the industry averages. Secondary schools in the Mukono District of Uganda in 2003 represented a high growth industry. Each year, new schools began operations. It is not unexpected, then, that the industry averages would show substantial growth in total assets. In the fixed assets category, it appears that other schools in the District were amassing assets at a very fast pace. An industry average increase in fixed assets of over 40% in one year is rather staggering. The implication is that on the average, schools in the Mukono District were building classrooms, dormitories, libraries, etc., at the rate of 40% per year. School Y, by

Table G.6

*Horizontal Analysis by Common Category, School Y, Balance Sheet, Percentage Changes from Fiscal Year 2002 to 2003*

	% Change 2002 to 2003	Industry Averages
Assets		
Quick Assets	40.48068678	83.55921451
Current Assets	20.42393465	100.1387453
Fixed Assets	-0.17063301	40.1850895
Total Assets	1.618128812	39.52306116
Current Liabilities	-8.17163430	130.412956
Long-term Liabilities	--	18.33211415
Total Liabilities	-8.17163430	67.81946198
Owners' Capital	5.746260272	3.38616507
Retained Earnings	--	84.69258818
Total Owners' Equity	5.746260272	10.27999126
Total Liabilities + Owners' Equity	1.618128812	39.52306126

comparison, appears to have changed little in fixed assets. Its miniscule decrease in net fixed assets must reflect a gross increase in this category that was slightly more than offset by depreciation taken on all fixed assets so that its overall decrease in this category was only 0.17 of one percent.

Quick assets and current assets did increase, by 40% and 20% respectively. However, these are small increases compared to the industry averages and are calculated on relatively small monetary value items. Again, this analysis suggests that this school is more stable in its activity levels. It is interesting to note, however, that a review of contextual data obtained via the survey shows that while overall assets changed little, there was a substantial increase in student enrollments from 380 students in 2002, to 537 students in 2003.

On the flip side of the balance sheet—the liabilities and owners' equity section—several items are noted. (1) Current liabilities actually decreased by 8%. This compares well with twenty percent increase in current assets. As a result, the working capital (current assets

– current liabilities), a figure that is not explicitly shown on the balance sheet, but is a key figure for analysis purposes, increased. This is a positive trend. It suggests that the school is in an improved financial position to meet its current liabilities as they come due. (2) Total liabilities for the industry increased, a reflection that much of the increase in fixed assets of other schools was financed through debt. School Y, however, has no long-term liabilities and experienced a decrease of 8% in its current (and therefore total) liabilities. This is a positive trend. (3) School Y does not show retained earnings. Investigation shows that the school is owned by nine partners. In a partnership, it is common to directly increase or decrease each partner's account with their proportionate share of the profits or losses. Although the individual partners' accounts are not shown in this analysis, the notes to the financial statements reveal that profits and losses are shared equally, regardless of the partner's actual investment in the school. (4) The overall increase in owners' equity for School Y was not as high as for the industry in general. However, this is not an area for great concern. Many newer schools were starting from a near zero position. It appears that the owners of this school ascribe to financially conservative strategies for operations. A sustained 6% annual growth in equity (in the absence of additional capital contributions) is a positive indication of long-term fiscal viability.

Table G.7 presents the horizontal analysis of School Y's income statement. It identifies changes between fiscal year 2002 and fiscal year 2003. Industry averages—average income statement changes for all 10 schools in the sample—are also presented. Comments follow the numeric presentation.

Table G.7

*Horizontal Analysis by Common Category, School Y, Income Statement, Percentage Changes from Fiscal Year 2002 to 2003*

	% Change from 2002 to 2003	Industry Averages
Net Revenues	29.87891333	32.46944234
Salaries & Wages	25.82271656	36.95918422
Administrative Expenses	0.013493357	42.43206455
Depreciation Expense	23.89383748	42.47389961
Finance Charges	443.2353702	119.1621069
Other Expense	53.38194427	30.02820228
Bad Debt Expense		-1.293085801
Total Expenses	30.38473616	33.50274015
Net Income	14.98726328	8.996823167

Addressing the internal changes, it is seen that School Y's net revenues increased by 30% from 2002 to 2003. It is impressive that in response, or supporting this increase in revenues, the largest expense category (as identified in the horizontal analysis above), salaries and wages, was held to a lower percentage increase at 26%. This, in large measure, allowed the net income to increase by 15%, a factor that compares well to the industry average of 9%.

The horizontal analysis highlights one item of concern, the 443% increase in finance charges. Granted, this percentage increase is calculated on a relatively small monetary value. However, it does merit investigation. Likely, this is related to short-term financing to provide cash to meet current obligations. The negative working capital position of School Y puts it in a position of scrambling to secure its cash position.

*Other Elements for Analyses as Dictated by the Setting*

The research suggested that one other financial measure, revenue per student, could be useful in evaluating the overall financial position of private secondary schools in the

Mukono District of Uganda. As discussed in Chapter 5, a low revenue per student figure may indicate that the school is not covering its fixed as well as variable costs. This, if true, will have a negative impact on long-term fiscal viability. Ultimately, all costs, fixed and variable must be covered in order for a school to remain in operation.

A low revenue per student figure may also indicate that a school is attracting students because of its relatively inexpensive services. If true, this could be a positive influence on long-term fiscal viability, assuming that the school can continue to attract students based on its tuition and fees charges. An extension of this demand-driven revenues concept indicates that quality of education must also be taken into consideration. Low cost education is generally only attractive as long as quality is acceptable (whatever acceptable means in the consumers' minds). This research uses UNEB scores as a measure for quality of education. Comparing ranking of revenue per student (the greater the number, the lower the ranking, therefore the lower the revenue per student) with UNEB score rankings (the lower the number, the higher the ranking) addresses this question of cost of education to the student versus quality of the education provided at this school.

Revenue per student was calculated for School Y and is shown in Table G.8. It is presented with industry averages and relative ranking among the 10 sample schools.

Table G.8

*Revenue per Student*

School Y	Rank	Industry Average	Range of Values	
			Low	High
323,413.25	10 of 10	694,350.60	323,413.25	970,584.90

UNEB scores for School Y are presented in Table G.9 and Table G.10. These tables show, respectively, School Y's relative ranking within both the sample of 10 and the population of 59 UNEB schools.

Table G.9

*UNEB Mean Scores, School Y in a Sample of 10 Schools*

School Y	Rank	Industry Average	Range of Values	
			Low	High
5.73333	1 of 10	5.102055	3.87	5.73

Table G.10

*UNEB Mean Scores, School Y in the population of 59 UNEB Schools*

School Y	Rank	Industry Average	Range of Values	
			Low	High
5.73333	5 of 59	4.4335	3.24	6

Tables G.8 and G.9, when taken together, offer a compelling perspective of School Y. This school has the lowest revenue per student, making it the least expensive school for students in the sample population. However, it has the highest UNEB scores of any school in the sample. This means that School Y, based on information available, is a clear winner in the category of best product at the best price. These two factors combined suggest that this school, with proper supporting financial strategies, is well-positioned for long-term viability. These factors also suggest that School Y is an example to be studied and exemplified by other schools in the District.

School Y's relative position as 5<sup>th</sup> of 59 schools in UNEB scores, as shown in Table G.10, indicates that in the population there are four other schools that have higher rankings. However, we have no revenue report data on those schools and are therefore unable to conduct any type of financial analysis. Investigation of survey data shows that two of these

schools are government-aided schools, so they are not required to file revenue reports. The other two are private schools but did not file revenue reports. Therefore, it is assumed that these two private schools, although they exemplify excellent educational quality, are not financially successful. They had no net income, which is the basis for filing of revenue reports.

Comparisons of School Y with the other contextual elements identified in this research are presented in Table G.11. These contextual elements may or may not be relevant to the financial well-being of the school. Fiscal viability cannot be assessed in one measure. Rather, fiscal viability is a concept that encompasses the prospects for long-term financial health which is influenced by untold other variables, both quantitative (such as level of working capital or cash flow) and qualitative (such as owners philosophies and management strategies).

Table G.11

*Six Contextual Elements Identified in This Study*

	School Y	Ranking	Industry Average
1 Age of School	5	6 of 10	8.8
2 Total # Students in School	537	7 of 10	649.2
3 # Students taking UNEB at school	60	10 of 10	93.3
4 % Female Students	52.14153	3 of 7	55.61633
5 Student/Teacher Ratio	18.51724	4 of 9	22.82589
6 % Boarding Students	89.75791	6 of 8	85.16203

1. At five years old, School Y appears to be relatively new. However, it lies in the older one-half of the sample population. This may suggest that in comparison to other schools in the sample population, School Y has had a little more time to build physical facilities, to establish its reputation, and to establish solid internal fiscal policies and procedures.

2. The ranking for total number of students places the largest school first. Therefore, School Y's ranking of 7<sup>th</sup> shows that this school is one of the smaller schools in the sample. It is 17% lower than the industry average. This may have some impact on the financial measures as well as the quality of education. There may be some sort of economies of scale. This can only be addressed through further research.
3. The number of students taking the UNEB exam at this school is the smallest in the sample. An investigation of the original survey responses for School Y shows that the school actually sent 16 of its students to other schools for O-level testing in 2003. There is no indication why this was done. Could it be that the school was only licensed or set up to examine 60 students? Or did the administration of the school recognize that 16 of their students might do poorly on the exam, and sent these students elsewhere? The role of allowing or disallowing students to take the exams at this school should be explored. This could have a very misleading effect on the variable used as a proxy or measurement for quality of education in this LDC setting.
4. This school ranked 3<sup>rd</sup> highest in percentage of female students at the school. This was slightly less than the industry average. It should be noted that there was one all-female school in the sample and there were no exclusively male schools. At 52%, this school has a fairly equal gender mix.
5. A high ranking in the student/teacher category would reflect more students per each teacher. School Y's 4<sup>th</sup> place ranking suggests that it is in the highest one-half of the sample, yet it is below the industry average. Basically, this school is near the middle of the sample as far as student/teacher ratios.



6. The percentage of boarding students for School Y is lower (but not substantially) than the industry average. This does not appear to be a critical factor.

*Further Description of School Y*

At this point in the analysis, it is apparent that School Y was, with the exception of cash related issues, mid-to upper-range in the desirability of its financial and most of its contextual rankings. School Y's position as the least expensive school, as well as the best quality school (as measured by UNEB scores), puts it in a top leadership position. In order to better understand the setting and unique characteristics of this school, the author returned to the original survey documents completed by the headmaster of School Y. The following facts, both quantitative and qualitative, may help the reader to more fully appreciate School Y's circumstances.

School Y was established in 1998 and therefore was only five years old at the time of this research. Its partnership ownership structure was unique among the 10 sample schools. The revenue report shows that partners include four reverends, two females and three other men. The headmaster is one of the partners. There are 15 members of the board of directors, three of whom are employed at School Y. This hands-on, diversified but involved ownership structure may, in part, account for the school's excellent balance between costs and quality.

The school is situated 5-15 minutes walking distance from the nearest taxi drop off areas. It lies on a mostly grassy, somewhat hilly six-acre parcel of land, some of which is under cultivation for food crops. There is no tarmac on the property but there is a water source. Rain water is captured in one tank. Water is hand-carried in jerry cans to points of use; there is no running water. There are no flushing toilets. Wood is used for cooking, paraffin for lamps. Electricity usage is limited by its high cost. All students receive

computer training, but the computers are available to students only two hours per week. Furthermore, no computer paper or disks are available for use. There is an active sports program.

### *Findings and Commentary*

Important findings for this single school analysis are summarized as follows. The seven key ratios and 6 supplemental financial ratios show that School Y is generally a conservative mid-range performer. Only two areas are noteworthy. First, cash and current assets appear to be insufficient to meet liabilities. Finance charges from short-term borrowing have greatly increased. Attention should be given to better cash flow management. Second, School Y has no long-term debt and finances its assets primarily through owners' capital. This fiscally conservative policy, if maintained, leaves School Y in a favorable position regarding its long-term financial viability.

The most striking finding of this single school analysis is that School Y is the best buy for the money. It ranks highest in UNEB scores and lowest in revenue per student (cost to the student). This combination is undoubtedly a critical element of long-term fiscal viability. It also places this school in a position to be used as a "model school" for future analysis.

### *Conclusion*

This research has addressed private school financial analysis and fiscal viability in an LDC setting. It has explored theoretical as well as practical applications. A model for assessment of financial position was identified. This appendix applies the financial assessment model to actual data from one of the schools in the sample. A comparison is made between the performance of "School Y" and industry standards developed in this study.