Mass Schooling, Nation Building and the Sovereignty of the Kenyan State

By

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Abstract

The purpose of this study was to investigate whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty. The investigation involved developing eight multiple regression models. Each model utilized one dependent variable, one independent variable and two control variables. The dependent variables were the average boys and the average girls public primary education gross enrollment ratios for 2000 – 03, the boys and the girls public primary education completion rates for the class of 2003, and the boys and the girls public primary education gross enrollment ratios for 2003. The independent variables were the public primary education pupil/teacher ratios for 2000 and the public primary education pupil/teacher ratios for 2003. The two control variables were the percentage of the population living in towns in 1999 and the percentage of the population in wage employment in 1999. The only significant results were a negative relationship between public primary education pupil/teacher ratios for 2003 and the girls public primary education completion rates for the class of 2003 and, a positive relationship between the percentage of the population in wage employment in 1999 and the girls public primary education completion rates for the class of 2003. The results suggested that Kenya's national policies of education are not consistent with the principles of nation building and state sovereignty and led to the conclusion that Kenya's public primary education may not be playing the nation-building role that it should play.

Dedication

To the people of Kenya

Whose nationhood and sovereignty

And, therefore, economic, political and social development;

Like the nationhood and sovereignty

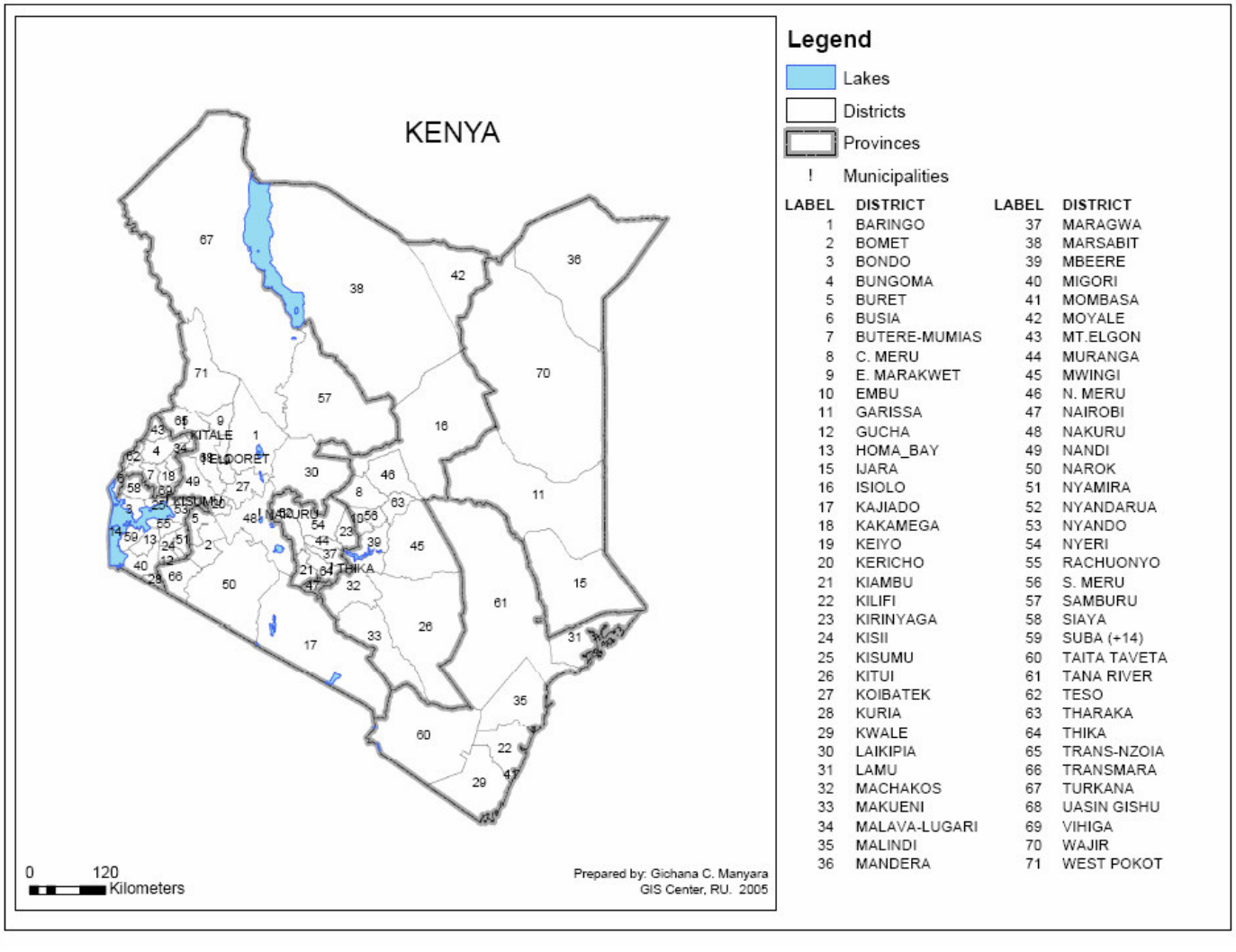
And, therefore, economic, political and social development

Of the peoples of other countries of the world;

Is subject to the expansion

Of secular, State financed education

The Map of Kenya and its Districts



LABEL	DISTRICT	LABEL	DISTRICT
1	BARINGO	37	MARAGWA
2	BOMET	38	MARSABIT
3	BONDO	39	MBEERE
4	BUNGOMA	40	MIGORI
5	BURET	41	MOMBASA
6	BUSIA	42	MOYALE
7	BUTERE-MUMIAS	43	MT.ELGON
8	C. MERU	44	MURANGA
9	E. MARAKWET	45	MWINGI
10	EMBU	46	N. MERU
11	GARISSA	47	NAIROBI
12	GUCHA	48	NAKURU
13	HOMA_BAY	49	NANDI
15	IJARA	50	NAROK
16	ISIOLO	51	NYAMIRA
17	KAJIADO	52	NYANDARUA
18	KAKAMEGA	53	NYANDO
19	KEIYO	54	NYERI
20	KERICHO	55	RACHUONYO
21	KIAMBU	56	S. MERU
22	KILIFI	57	SAMBURU
23	KIRINYAGA	58	SIAYA
24	KISII	59	SUBA (+14)
25	KISUMU	60	TAITA TAVETA
26	KITUI	61	TANA RIVER
27	KOIBATEK	62	TESO
28	KURIA	63	THARAKA
29	KWALE	64	THIKA
30	LAIKIPIA	65	TRANS-NZOIA
31	LAMU	66	TRANSMARA
32	MACHAKOS	67	TURKANA
33	MAKUENI	68	UASIN GISHU
34	MALAVA-LUGARI	69	VIHIGA
35	MALINDI	70	WAJIR
36	MANDERA	71	WEST POKOT

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Chapter 1: Introduction

When Kenya gained her independence from British colonial rule on December 12, 1963, she adopted a constitution which decreed the creation of a sovereign Kenyan state that could compete against other states for economic, technological and military superiority. A sovereign Kenyan state, the constitution further decreed, was to be created by building an integrated progress-oriented Kenyan nation that was an aggregate of individuals whose loyalty was mediated by the state. These constitutional decrees were suggested by provisions in her independence constitution for individual liberties and freedoms that could only be exercised if the organization of the Kenyan national polity was based on respect for the individual. For example, the constitution provided for periodic presidential and parliamentary elections through universal suffrage and guaranteed the freedom of speech, the freedom of the press and the freedom of worship.

According to the Kenyan constitution, therefore, Kenya's independence granted Kenya the opportunity to become a sovereign state rather than the actual sovereign status. To actually become a sovereign state, the constitution proposed that Kenya was to begin a process of nation building that would involve creating future adult individuals who, in heart and mind, were loyal, first and foremost, to the Kenyan state.

The Process of Building an Integrated Progress-Oriented Kenyan Nation

The process through which a progress-oriented Kenyan nation that is an aggregate of individuals could be built is suggested by the world institution theory of mass schooling. According to the theory, mass schooling, defined as a politically constructed childhood socialization process of expanding secular state financed education to the masses, is a world institution which emerged in Western Europe and the United States in

the late 18th Century and throughout the 19th Century and spread to the rest of the world in the 20th Century to build integrated nations and create sovereign states (Baker, 1999; Boli, Ramirez, & Meyer, 1985; Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992; Ramirez & Boli, 1987). To the world institution theorists, therefore, nation building and state sovereignty are principles of a world polity which, if adhered to, compel mass schooling.

The world institution theory is supported by mass schooling research studies which examined, historically and empirically, the rise and spread of mass schooling in Europe and the United States in the late 18th Century and throughout the 19th Century and around the world in the 20th Century. The studies showed, for example: (a) that the expansion of education to the masses in the late 18th Century and throughout the 19th Century preceded the emergence of the bureaucratic state and the consolidation of capital in Europe and the United States (Boli, Ramirez, & Meyer, 1985; Fishlow, 1966; Fuller & Rubinson, 1992; Fuller, Hage, Garnier, & Sawicky, 1992; Meyer, Tyack, Nagel, & Gordon, 1979; Ramirez & Boli, 1987; Soysal & Strang, 1989); (b) that there was a coincidence between the emergence and spread of mass schooling around the world and the emergence of the principles of nation building and state sovereignty (Meyer, Ramirez, & Soysal, 1992); (c) that once introduced, mass schooling became a self-generating process which was only limited by the size of the population that was educated and the size of the school-age population that was yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992); (d) that mass schooling is a standardized mode of socialization that is purposed to create individual members of an integrated world polity (Benavot, Cha, Kamens, Meyer, & Wong, 1991); and (e) that

neither the factors of national development nor the factors of state strength significantly explained educational expansion beyond the explanation that was provided by the self generating process that is built into the institution of mass schooling (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992).

While these findings supported the world institution theory, however, they also discredited other major theories of mass schooling which propose a link between national conditions and educational expansion. The theories include the functional theories and the supply of schooling theory. According to functional theories, national development, defined as the economic, political and social reorganization of a national polity based on respect for the individual is the originator of mass schooling. Among the theories are the technical-functional theory that education expands to address demand for skilled labor (Collins, 1971; Fuller, 1983; Fuller & Rubinson, 1992; Meyer, Ramirez, & Soysal, 1992; Walters, 1984); the human capital theory that education is an investment which yields "a future stream of returns or dividends to the initial investment" (Becker, 1964; Denison, 1964: Fuller & Rubinson, 1992; Langelett, 2002, p. 1; Shultz, 1961); and the class/status conflict theory that educational expansion is a function of class/status competition for education (Boli, Ramirez, & Meyer, 1985; Fuller & Rubinson, 1992; Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977).

In contrast to the functional theorists, the supply of schooling theorists propose a relationship between "the number and location of schools, classrooms, and teachers" (Walters, McCammon, & James, 1990, p. 2), which they associate with state strength, and mass schooling (Meyer, Ramirez, Rubinson, and Boli-Bennett, 1977). State strength refers to the fiscal, legislative and political power of the state to control education (Hage,

Garnier, & Sawicky, 1992, p. 931; Soysal & Strang, 1989). To the supply of schooling theorists, therefore, state strength is the originator of mass schooling.

Apart from the studies which supported the world institution theory, these theories were also discredited: (a) by studies which examined the relationship between educational expansion and demand for education factors such as industrialization (Fuller, 1983, Walters, 1984), urbanization (Fuller, 1983; Walters, 1984) and democracy (Benavot, 1996); (b) by studies which examined the effect on educational expansion of society level economic, political and social factors such as race (James & Walters, 1990; Walters, McCammon, & James, 1990; Walters & O'Connell, 1988), class (Garnier, Hage, & Fuller, 1989; Hage & Garnier, 1990; Walters, McCammon, & James, 1990; Walters & O'Connell, 1988), and immigration (Ralph & Rubinson, 1980) that supply of schooling theorists say affect school participation; and (c) by studies which examined the relationship between educational expansion and state strength as measured by factors such as the state policy on the length of the school year (Meyer, Tyack, Nagel, & Gordon, 1979), the passage of compulsory school attendance laws (Soysal & Strang, 1989), and state expenditures on education per child (Fuller, Hage, Garnier, & Sawicky, 1992; Meyer, Tyack, Nagel, & Gordon, 1979) that the supply of schooling theorists associate with mass schooling. The studies of the relationship between demand for education and educational expansion and those that examined the relationship between state strength and educational expansion typically found no relationship (Ramirez & Meyer, 1980; Walters & O'Connell, 1988). The studies that examined the effect on educational expansion of society level factors confirmed the argument by supply of schooling

theorists that such factors constrained education by limiting the type, the quantity and the quality of education that children could access.

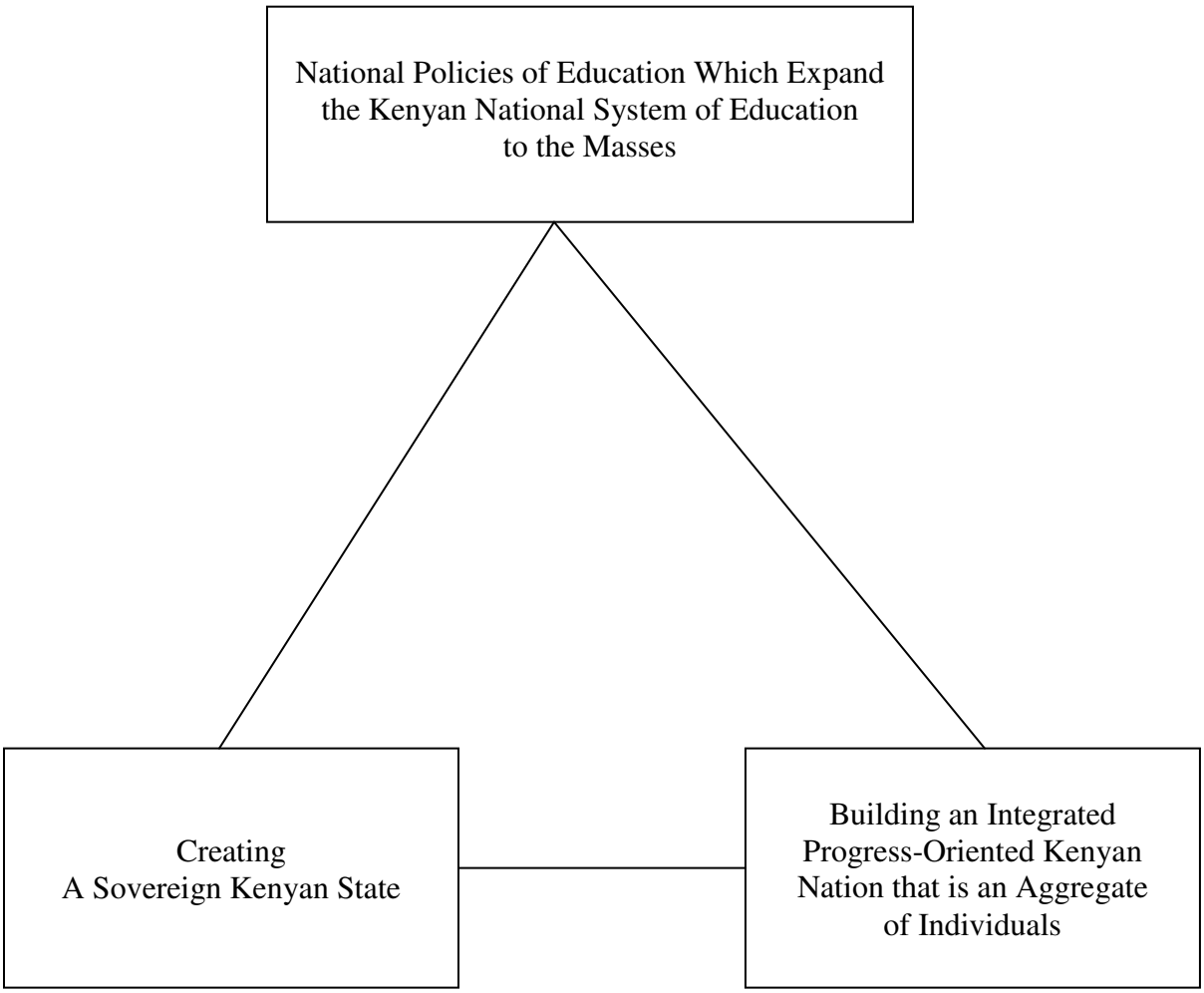
Theoretically, therefore, the building of an integrated progress-oriented Kenyan nation and, therefore, the creation of a sovereign Kenyan state that was decreed by Kenya's independence constitution depended on the national policies of education that Kenya adopted. On the one hand, educational policies which were consistent with the principles of nation building and state sovereignty would expand secular, state financed education, defined in this study as the Kenya national system of education, and build the Kenyan nation. Such policies would emphasize respect for the individual and, therefore, foster national progress (Boli, Ramirez, & Meyer, 1985). On the other hand, national policies of education that were explained by Kenya's national economic, political, and social demand for education or by the strength of the Kenyan state would constrain education and, therefore, undermine the building of the Kenyan nation. The policies would also foster tradition rather than progress by emphasizing respect for special interest groups. A Theoretical model of the relationship between the national policies of education that expand the Kenyan national system of education to the masses, the building of an integrated progress oriented Kenyan nation that is an aggregate of individuals, and the creation of a sovereign Kenyan state is depicted in Figure 1.

Purpose of Study

The purpose of this study was to investigate whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty which, the world institution theorists propose, compelled the establishment and expansion of national systems of education in Europe and the United States in the late 18th Century

Figure 1

A Theoretical Model of the Relationship between the National Policies of Education Which Could Expand the Kenyan National System of Education to the Masses, the Building of an Integrated Progress Oriented Kenyan Nation that is an Aggregate of Individual and the Creation of a Sovereign Kenyan State



and throughout the 19th Century and around the world in the 20th Century.

Research Question

This study was designed to address the question, "Are Kenya's national policies of education consistent with the principles of nation building and state sovereignty?"

Rationale for the Study

The fact that national policies of education can be explained (a) by the principles of nation building and state sovereignty that are known to expand education; (b) by national economic, political and social demand for education that is known to constrain education; or (c) by state strength which is also known to constrain education suggests that the national systems of education which result from national policies of education can either become tools for building integrated progress-oriented nations or instruments of social stratification and underdevelopment. By examining whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty, therefore, this study was intended to contribute to an understanding of the role that the Kenyan national system of education plays in Kenya.

Significance of the Study

The significance of this study is underscored by the fact that few studies of Kenyan education have assumed a relationship between the Kenyan national policies of education and the building of an integrated progress-oriented Kenyan nation. Instead, most of the studies have tended to focus on the impact that the conditions which define the Kenyan national polity have had on education in Kenya without regard to the nation building mission of public education. The studies were important in the sense that their findings collectively suggested the weakness of the Kenyan national policies of education

which is that the policies, like national policies of education in other developing countries, constrain education and, therefore, stratify rather than integrate society (Buchmann & Hannum, 2001). The studies could, however, neither examine the quality of the Kenyan national system of education as measured by its nation building purpose nor recommend integrating policies of education based upon which an integrated progress-oriented Kenyan nation could be built. This study will be able to do both because it assumes a relationship between the Kenyan national policies of education and the building of an integrated progress-oriented Kenyan nation.

Overview of the Methodology

This study was a survey of 62 out of 75 districts for which the Ministry of Education, Science and Technology (MoEST) reported educational data on its website: www.education.go.ke/resources.htm. The districts were selected because they had complete data for the six dependent variables, two independent variables and two control variables of this study.

The six dependent variables included the average boys public primary education gross enrollment ratios for 2000 - 03; the average girls public primary education gross enrollment ratios for 2000 - 03; the boys public primary education completion rates for the class of 2003; the girls public primary education completion rates for the class of 2003; the boys public primary education gross enrollment ratios for 2003; and the girls public primary education gross enrollment ratios for 2003. The independent variables were the public primary education pupil/teacher ratios for 2000 and the public primary education pupil/teacher ratios for 2003. The two control variables were the percentage of the population that lived in towns in 1999 and the percentage of the population that was

in wage employment in 1999. Since the purpose of this study was to examine whether the Kenyan national policies of education are consistent with the principles of nation building and state sovereignty, these variables were used to test the hypothesis that *The Kenyan National Policies of Education are Consistent with the Principles of Nation Building and State Sovereignty.* The hypothesis was tested by developing eight multiple regression models. Each model utilized one of the six dependent variables, one of the two independent variables and the two control variables.

The Constructs of the Study

The constructs of this study and their conceptual definitions as well as their operational definitions which were the variables of study are shown in Table 1

Limitations of the Study

The focus of this study was limited to the public primary education level of the Kenyan national system of education. This is the kind and level of education that is assumed in mass schooling literature to build integrated progress-oriented nations. Public primary education in Kenya is defined as eight years of education from standard 1 to standard 8. The officially stated age group for this level of education was children aged 6 – 13.

Table 1

The Study Constructs, their Conceptual Definitions, and their Operational Definitions

Construct	Conceptual Definition	Operational Definition
Mass schooling	The political process of expanding the Kenyan national system of education to the masses	1. The average boys public primary education gross enrollment ratios for 2000-03 2. The expansion of girls public primary education gross enrollment ratios for 2000-03 3. The boys public primary education completion rates for the class of 2003 4. The girls public primary education completion rates for the class of 2003 5. The boys public primary education gross enrollment ratios for 2003 6. The girls public primary education gross enrollment ratios for 2003

Table 1 (Continued)

The Study Constructs, their Conceptual Definitions, and their Operational Definitions

Construct	Conceptual Definition	Operational Definition
The strength of the Kenyan state	The fiscal, legislative and political power of the state to control education	1. The public primary education pupil/teacher ratios for 2000 2. The public primary education pupil/teacher ratios for 2003
Kenya's national economic development	The reorganization of the Kenyan economy based on respect for the individual	1. The percentage of the population that lived in towns in 1999 2. The percentage of the population that was in wage employment in 1999

Definition of terms

The following terms, as used in this study, are defined as follows.

Building the Kenyan Nation – The process of transforming the Kenyan masses into individuals whose loyalty is mediated by the Kenyan state

Development of Kenya – the economic, political, and social reorganization of the Kenyan polity based on respect for the individual (see Boli, Ramirez, & Meyer, 1985).

Ethno-linguistic Fractionalization – A measure of the extent to which a national society is homogeneous (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977); "a direct indicator of the potential forces of status competition toward educational expansion" (Meyer, Ramirez, & Soysal, 1992)

Special Interest Groups – elite groups that are based on factors such as race, class, clans, tribes, and religions that can undermine the sovereignty of the state

Mass Schooling – a politically constructed childhood socialization process of expanding education to the masses as a means to creating future individual adults whose loyalty is mediated by the state (Baker, 1999; Boli, Ramirez, & Meyer, 1985; Fuller & Rubinson, 1992; Ramirez & Boli, 1987).

Integrated Nations – nations that are aggregates of individuals.

Nation Building – a childhood educational process of creating future individual adults who, in heart and mind, are loyal, first and foremost, to the state (Meyer, Tyack, Nagel, & Gordon, 1977; Ramirez & Boli, 1987).

National Development – the economic, political, and social reorganization of a national polity based on respect for the individual

State Sovereignty – The ability of the state to mediate the loyalty of individual members of a national polity

State Strength – The fiscal, legislative and political strength of the state

Supply of Schooling – "the number and location of schools, classrooms, and teachers" (Walters, McCammon, & James, 1990, p. 2).

Sovereign State – a state that mediates the loyalty of individual members of an integrated national polity.

Chapter 2: Review of Literature

In this chapter, is a review of the mass schooling research studies which informed the current study of whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty. Based on the review, national policies of education are consistent with the principles of nation building and state sovereignty if they expand education. The review proposes five guidelines for making national policies of education which are consistent with the principles of nation building and state sovereignty. The guidelines are: (a) that national policies of education be explained by factors external to national polities, (b) that national policies of education assume state control of education, (c) that national policies of education assume decentralized national systems of education, (d) that national policies of education assume secular national systems of education, and (e) that national policies of education assume national systems of education to be decentralized units of a world institution that is purposed to create individual members of an integrated world polity.

Factors Which Explain National Policies of Education

Whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty depends on the factors which explain them. Based on mass schooling research, the policies could be driven by factors external or factors internal to the Kenyan national polity. Factors external to national polities are identified in the research as the principles of nation building and state sovereignty (Benavot, Cha, Kamens, Meyer, & Wong, 1991; Boli, Ramirez, & Meyer, 1985; Ramirez & Boli, 1987; Meyer, Ramirez, & Soysal, 1992) which the world institution theorists associate with mass schooling (Fuller & Rubinson, 1992; Boli, Mickelson, Nkomo, &

Smith, 2001; Ramirez, & Meyer, 1985). The principles, the research suggests, explain national policies of education when the compelling interest of the state in education is to build integrated progress-oriented nations. The interest fosters mass schooling by limiting educational expansion (a) based on the number of people who are educated relative to the size of the school age population that is yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992; Ramirez & Boli, 1987) and (b) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992).

The principles of nation building and state sovereignty are, both historically and empirically, contrasted with factors internal to national polities. Factors internal to national polities are the national conditions which are identified in mass schooling research as national development and state strength. National development is defined as the economic, political and social reorganization of national polities based on respect for the individual while state strength refers to the fiscal, legislative and political power of the state to control education. Some of the factors of national development that are identified in mass schooling research are urbanization (Fuller, 1983; Walters, 1984; Walters, McCammon, & James, 1990), industrialization (Fuller, 1983; Walters, 1984), democracy (Benavot, 1996), wage employment (Hage & Garnier, 1990; Walters, McCammon, & James, 1990; Walters & O'Connell, 1988) and independence (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977). These factors of national development are contrasted with factors of underdevelopment such as race (James & Walters, 1990), socio-economic status (Soltow & Stevens, 1977), religion (Fuller, 1983; Ralph & Rubinson, 1980; Walters, McCammon, & James, 1990; Walters & O'Connell, 1988),

class (Burns, Hage, & Garnier, 2004; Garnier & Hage, 1991; Garnier, Hage, & Fuller, 1989; Hage & Garnier, 1990) and collective non-wage rural agricultural economic activities (Walters, McCammon, & James, 1990; Walters & O'Connell, 1988). Examples of state strength factors are the length of school year (Meyer, Tyack, Nagel, & Gordon, 1979) and the presence of compulsory attendance law (Soysal & Strang, 1989) which exemplify state legislative power, expenditures on education per child (Fuller, Hage, Garnier, & Sawicky, 1992; Meyer, Tyack, Nagel, & Gordon, 1979) and the pupil/teacher ratios (Burns, Hage, & Garnier, 2004; Fuller, Hage, Garnier, & Sawicky, 1992; Garnier, Hage, & Fuller, 1989) which are measures of state fiscal power, and independence which signifies state political power (Meyer, Ramirez, Rubinson, & Boli-Bennet, 1977).

In contrast to the principles of nation building and state sovereignty, these factors of national development and state strength inform national policies of education when the policies are designed to serve national interests (Boli, Ramirez & Meyer, 1985; Meyer, Ramirez Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992; Ramirez & Boli, 1987). Rather than expand education and build integrated progress-oriented nations, however, such policies constrain education (Meyer & Ramirez, 1990) and, therefore, emphasize tradition by empowering special interest groups which serve as alternative centers of power to the power of the state (Boli, Ramirez, & Meyer, 1985; Ramirez & Boli, 1987). This contrast is historically demonstrated by the apparent linkage between European nationalism and educational expansion in the 19th Century regardless of the diversity of the economic, political and social conditions which characterized European countries (Ramirez & Boli, 1987). The linkage was championed by European nationalists who believed nationalism to be a state of mind which could only be shaped by secular

state-financed educational systems that expanded education to the masses. To the nationalists, therefore, state systems of education were nation-building tools and nation-building was a childhood educational process of creating future individual adults who, in heart and mind, were loyal, first and foremost, to the states (Meyer, Tyack, Nagel, & Gordon, 1979). The nationalists believed the new systems of education to be an imperative if sovereign European states which could compete for economic, technological and military superiority were to be created.

Empirically, the principles of nation building and state sovereignty are contrasted with national conditions in cross national studies which investigated the origin of mass schooling. Some of the studies were the Meyer, Ramirez, and Soysal (1992) study which investigated the world expansion of mass schooling between 1870 and 1980; and the Meyer, Ramirez, Rubinson, and Boli-Bennett (1977) study which investigated the forces behind "the extremely rapid expansion of national educational systems that occurred throughout the world between 1950 and 1970" (p. 242). The studies tested the hypothesis that regardless of national conditions, "education expands into the previously uneducated sectors of the population at a rate determined by the original proportion of educated people" (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977, p. 245). The hypothesis is graphically depicted by the S-shaped curve according to which enrollment growth rate is low near 0 (the floor of the curve), high in the middle of the curve, and low again near 1 (the ceiling of the curve). Both studies confirmed the hypothesis as they found that "the size and rates of growths of the populations in school and in the uneducated age-groups of school age" (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977, p. 247), not national conditions, significantly explained school enrollment growth. This finding led to the

conclusion that school enrollment growth was a process of diffusion which, like a contagious disease, is only limited by the floor and ceiling effects.

Along with the diffusion process, the Meyer, Ramirez, and Soysal (1992) study also found evidence of the existence of a central world force which drove mass schooling by limiting educational expansion to the size of the population that was yet to be educated. This finding was based, first, on results which suggested that educational expansion was, between 1870 and 1940, explained by the linkage between national polities and the world polity with its principles of nation building and state sovereignty and, second, on results which showed that educational enrollments expanded "into available population regardless of previous enrollment levels" as a result of the events of World War II which compelled states in some parts of the world to adhere to the principles of nation building and state sovereignty (p. 143). Unlike in the diffusion model, therefore, school enrollment growth in the common world institution force model is constrained only by the size of the population that is yet to be educated. This finding confirmed the contention by the world institution theorists that schooling expands to build integrated progress-oriented nations but not to serve the economic, political and social interests of national polities (Boli, Ramirez, & Meyer, 1985, Fuller & Rubinson, 1992; Mickelson, Nkomo, & Smith, 2001).

Historically and empirically, therefore, educational expansion is a function of factors external, not factors internal, to national polities. The factors internal to national polities are the principles of nation building and state sovereignty which foster mass schooling by limiting educational expansion (a) based on the number of people who are educated relative to the size of the school age population that is yet to be educated

(Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992) and (b) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992). The factors internal to national polities are the factors of national development which limit educational expansion based on factors such as industrialization and the factors of state strength such as the passage of compulsory attendance laws.

By implication, whether Kenya's national policies of education generate mass schooling and build an integrated progress-oriented Kenyan nation depends on the factors which explain them. The policies would generate mass schooling if they were explained by the principles of nation building and state sovereignty. The principles would explain the policies if the compelling interest of the Kenyan state in education was to build an integrated progress-oriented Kenyan nation. If explained by national development and state strength, however, the policies would constrain mass schooling by limiting the quantity, the quality and the type of education that children could access. The result would be a stratified and underdeveloped Kenyan national polity in which respect for special interest groups rather than respect for the individual and, therefore, respect for tradition rather than respect for progress are emphasized. The policies would be influenced by national development and state strength factors if the Kenya national system of education was designed to serve the interests of the Kenyan polity.

Control of Education

Whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty also depends on their assumption with regard to control of education. Control of education is defined as the ability to dictate the

educational agenda (Fuller, Hage, Garnier, & Sawicky, 1992). Based on nationalist and theoretical explanations of mass schooling, national policies of education can assume control of education by states, by individuals and their families, or by aggregate level economic, political and social interest groups.

State Control of Education

State control of education as a means to educational expansion was championed by European nationalists in the late 18th Century and throughout the 19th Century (Ramirez & Boli, 1987) and more recently by the supply of schooling theorists (James & Walters, 1990; Walters, McCammon, & James, 1990). According to the nationalists, states could take control of education if their compelling interest in it was to build nations that were aggregates of individuals whose loyalty they mediated (Boli, Ramirez, & Meyer, 1985; Ramirez & Boli, 1987). This view is, for example, supported by historical evidence which credits control of education by the Prussian state with the unification and subsequent emergence of Germany as a major European military and economic power in the late 19th Century (Ramirez & Boli, 1987).

The rise of Germany as a major European military power was signaled by her victory over France in the Franco-Prussian war of 1870. The victory sparked off a public debate in France regarding "primary education as a means to national renewal" since the French nationalists believed that it was the "Prussian schoolmaster" who had won the war (Reisner, 1922, cited in Ramirez & Boli, 1987, p. 8). The debate in France was significant because Prussia had early in the 19th Century been reduced to a third rate European state following the heavy economic and military losses that it had suffered in the Seven Years War that was fought between 1756 and 1763 and its defeat by France

that led to the humiliating Treaty of Tilsit that it was forced to sign in 1806. In both occasions, Prussia had turned to education for national renewal as evidenced, for example, by the establishment of the Prussian national system of education in 1763 and the many educational policy changes that were instituted after its defeat by France. The policy changes were designed to accede to nationalist clamor for educational reforms that could result in an education which would "teach all Germans to be good Germans and . . . prepare them to play whatever role – military, economic, political – fell to them in helping the state reassert Prussian power" (Marriott & Robertson, 1915, cited in Ramirez & Boli, 1987, p. 5).

Apart from France, the rise of Germany also threatened Great Britain which until then was the economic superpower by virtue of her dominance of the manufacturing industry (Ramirez & Boli, 1987). Like the French nationalists, the British nationalists reacted by demanding the establishment of the British national system of education that could result in improved "British workmanship" and the achievement of "greater national cohesion in order to compete" in the larger European system (p. 9). Although "hesitant" because of "fiscal constraints" and the grip with which the middle class controlled education, the British state was compelled, by the nationalist clamor, to intervene in education (Hage & Garnier, 1990, pp 55, 64; Ramirez & Boli, 1987; Soysal & Strang, 1989). The state yielded to the demand by passing pieces of legislation that gradually granted it control of education. Among them were the Elementary Education (Forster) Act of 1870 which decreed the provision of elementary education and the compulsory attendance law which signaled the establishment of the British national system of education in 1880. Thus, consistent with the nationalist view of educational expansion,

control of education by the Prussian state transformed Prussia from an inherently weak "state without a nation" in the 18th Century into a powerful sovereign state which defeated France in 1870 and challenged the supremacy of Great Britain in manufacturing in the late 19th Century (Ramirez & Boli, 1987, p. 4).

Like the European nationalists, the supply of schooling theorists contend that states control education when their policies of education assume adequate supply of schooling. This view is empirically supported by studies which suggested that educational expansion is only affected by national conditions when state policies of education do not assume adequate supply of education. In one of the studies, Walters (1984) showed that employment in manufacturing and agriculture in the United States negatively affected secondary schooling when it was becoming mass between 1922 and 1951 but had no effect between 1952 and 1979 when secondary schooling had become a mass institution. Similarly, inadequate supply of secondary schooling in Great Britain resulted in dual systems of education – one for the middle class families and one for the working class families (Burns, Hage, & Garnier, 2004; Hage & Garnier, 1990).

In contrast to the nationalist view of education, however, the supply of schooling theory holds that educational expansion is a function of state strength which supply of schooling theorists associate with "the number and location of schools, classrooms, and teachers" (Fuller, Hage, Garnier, & Sawicky, 1992; James & Walters, 1990; Walters, McCammon, & James, 1990, p. 2). To the supply of schooling theorists, therefore, state control of education is explained by the fiscal, legislative and political power of the state. Based on mass schooling research, however, state strength is not associated with mass schooling (Meyer & Ramirez, 1980). This lack of relationship led to conclusions which

suggested: that states do not have adequate resources to finance mass schooling (Fuller, Hage, Garnier, & Sawicky, 1992); that states lack the "deep organizational roots in the population" that they need to control mass schooling (Soysal & Strang, 1989, p. 286); that states lack the "legitimacy" to control mass schooling because, like their teachers, they are viewed as outsiders "trying to get inside" the local schools (Fuller, Hage, Garnier, & Sawicky, 1992, p. 931) ; that states cannot "surround and influence primary schools" because they lack "the organizational capacity to penetrate the provinces" (Fuller, Hage, Garnier, & Sawicky, 1992, p. 931); and that because of all these factors, state policies of education are arbitrary.

These conclusions are especially true given the rural agricultural origins of mass schooling which are believed to have impeded state control of education based on fiscal, legislative or political power (Meyer, Tyack, Nagel, & Gordon, 1977). The 19th Century France was, for example, a "Provincial Society" in which only 23% of the population lived in cities of 2000 or more residents at mid 19th Century (Fuller, Hage, Garnier, & Sawicky, 1992, p. 925) while the United States was described as "overwhelmingly rural and non-industrialized until late in the 19th Century (Guest & Tolnay, 1985; Meyer, Tyack, Nagel, & Gordon, 1977, p. 595). Only 20% of the United States population lived in cities of 2500 or more residents in 1860 and only 40% lived in such cities in 1900. According to Weber (1976), for example, rural France was characterized by "subsistence farming, stark poverty, isolated markets, poorly maintained roads and common use of regional currencies" (cited in Fuller, Hage, Garnier, & Sawicky, 1992, p. 925). Thus the credibility of the supply of schooling theory that state control of education can be based on the fiscal, legislative and political power of the states is partly undermined by the rural

conditions under which mass schooling rose and spread, and partly by the fact that states are never fiscally, legislatively, or politically strong enough to control mass schooling.

Control of Education by Individuals or by Special Interest Groups?

Control of education by individuals and their families is assumed by functional theories of mass schooling. The theories include the technical-functional theory that education expands to address demand for skilled labor (Collins, 1971; Fuller, 1983; Fuller & Rubinson, 1992; Meyer, Ramirez, & Soysal, 1992; Walters, 1984); the human capital theory that education is an investment which yields "a future stream of returns or dividends to the initial investment" (Becker, 1964; Fuller & Rubinson, 1992; Langelett, 2002, p. 1; Shultz, 1961); and the class/status conflict theory that educational expansion is a function of class/status competition for education (Fuller & Rubinson, 1992; Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977). Based on these theories, educational expansion is a stimulus – response process in which employment, economic incentives which come with employment in the form of wages, and upward social mobility are the stimuli based upon which families make decisions about schooling. In other words, the theories assume adequate supply of schooling, readily available employment for the schooled, wages that are commensurate with schooling, and guaranteed upward social mobility for individuals whose families are committed to education. Hence, educational expansion is, in the functional models of mass schooling, explained by commitment by families to the education of their children.

This view of educational expansion is, however, contradicted by the nationalist view of education as well as by the supply of schooling theory that when national policies of education do not assume adequate supply of schooling, aggregate level economic,

political and social interest groups, not individuals and their families, take control of education. The reason, according to the 19th Century European nationalists, is that mass schooling precedes national development (Boli, Ramirez, & Meyer, 1985; Fuller, Hage, Garnier, & Sawicky; Meyer, Tyack, Nagel, & Gordon, 1979; Ramirez & Boli, 1987) while both the European nationalists and the supply of schooling theorists contend that there never is adequate supply of schooling unless national policies of education assume it. These arguments are borne out in mass schooling research by studies which investigated the validity of the functional theories and by studies which investigated the effects of aggregate level economic, political and social factors on schooling.

The studies which investigated the validity of the functional theories mostly found a relationship between demand for education and educational expansion because of their focus on the largely urban-industrialized north-eastern region of the United States (Walters, McCammon, & James, 1990; Walters & O'Donnell, 1988). Those that investigated the effects of aggregate level economic, political and social factors on schooling included studies which investigated educational expansion in all regions of the United States (Rubinson, 1986; Walters, McCammon, & James, 1990; Walters & O'Donnell, 1988) and studies which focused on France and Great Britain where secondary schooling was limited by class (Garnier, Hage, & Fuller, 1989; Hage & Garnier, 1990). Some of the studies which focused on the United States showed a distinction between urban-industrialism and rural agricultural economies as urban-industrialism was negatively related to enrollment growth but positively related to school attendance while the opposite was true of rural agricultural economies (Guest & Tolnay, 1985; James & Walters, 1990; Walters, McCammon, & James, 1990; Walters &

O'Donnell, 1988). Others found that family decisions about schooling were explained by factors such as race (James & Walters, 1990; Walters, McCammon, & James, 1990; Walters & O'Donnell, 1988), immigration (Ralph & Rubinson, 1980; Walters, McCammon, & James, 1990; Walters & O'Donnell, 1988) and religion (Fuler, 1983; Ralph & Rubinson, 1980). The French and British studies found that families did indeed make their schooling decisions based on their class expectations (Garnier, Hage, & Fuller, 1989; Hage & Garnier, 1990).

Contrary to the functional theories, therefore, education is never controlled by individuals and their families. Instead, as implied by European nationalists in the 19th Century and more recently by the supply of schooling theorists, education is controlled at the aggregate level of society either by states or by economic, political and social interest groups. Whether education is controlled by the state or by special interest groups depends on if national policies of education assume adequate secular supply of schooling. As already argued, national policies of education assume adequate supply of schooling if they assume state control of education based on commitment to the principles of nation building and state sovereignty but not if they assume state control of education based on the fiscal, legislative or political strength of the states.

Organization of Education

Whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty also depends on the organization of the Kenyan national system of education. Two forms of organization, decentralized and centralized, are alluded to in mass schooling research. Of the two, the decentralized organization is adopted when national policies of education assume state control of education based on

the principles of nation building and state sovereignty while the centralized organization is associated with policies of education which assume state control of education based on state fiscal, legislative and political power (Fuller, Hage, Garnier, & Sawicky, 1992; Meyer & Ramirez, 1980; Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Soysal & Strang, 1989). Consistent with the relationship between mass schooling and the principles of nation building and state sovereignty theme that underlies this paper, therefore, it is argued here that national policies of education expand education to the masses if they assume decentralized national systems of education but constrain education by limiting the quality, quantity and type of education that children can access if they assume centralized national systems of education.

Decentralized Organization of Education

National systems of education are decentralized if control of education is shared between the central states and the local states, referred to in this section, for the purpose of clarity, as central government and local government (Fuller, Hage, Garnier, & Sawicky, 1992; Ramirez & Boli, 1987; Soysal & Strang, 1989). In this form of organization, the compelling government interest in education is to create sovereign states which can compete for economic and military superiority by building progress-oriented nations that are aggregates of individuals who are loyal, first and foremost, to the states (Meyer, Tyack, Nagel, & Gordon, 1979). As a result, governments are assumed to play the role of ensuring that the management of education functions such as the financing of education, the recruitment and discipline of teachers, the provision of school facilities, the development of the curriculum, and testing, are consistent with the principles of nation building and state sovereignty while the management of education is

itself left to the local government units. In Kenya, for example, the local government units which could be entrusted with the management of education are the city councils, the municipal councils and the county councils.

How the British government intervened in education between the late 19th Century and the 1980s and the role that the United States government has historically played in education are illustrative of how central governments could foster consistency between the management of education by local governments and the principles of nation building and state sovereignty. As already indicated, the very reason for the intervention in education by the British state in the late 19th Century was to expand education so as to "improve British workmanship and . . . achieve greater national cohesion" that could enable the British state to regain its economic, technological and military superiority in the European interstate system (Hage & Garnier, 1990; Ramirez & Boli, 1987, p. 9). Clearly, therefore, the compelling interest of the British government in education was to create a sovereign British state by building a progress-oriented British nation that was an aggregate of individuals whose loyalty was mediated by the state (Ramirez & Boli, 1987). The interest has since remained the challenge that the British government continues to grapple with. Until the 1980s, the government tackled the challenge by passing compromise national policies of education which empowered the local authorities as "initiators in education" (Horstman, 1987, p. 261-262) while encouraging the integration of the working class and middle class systems of education (Hage & Garnier, 1990).

The local control of education was particularly empowered by a 1902 law which "created a system of local educational authorities through which much of the governance

of the school system would take place" (Ramirez & Boli, 1987, p. 9). The local education authorities (LEA) were to exercise real power in education as, until the 1980s, they were empowered to tax for education and to "retain control over hiring of teachers . . . and the curriculum" (Horstman, 1987, p. 260; Jennings, 1977 cited in Hage & Garnier, 1990, p. 65). The taxes were collected based on "the ratable value of property in the county" (Horstman, 1987, p. 261-262) and paid 40% of the total cost of education per child. Consistent with the role of fostering consistency between the management of education by LEAs and the principles of nation building and state sovereignty, the central government, through the Rate Support Grants (RSG) program of the Ministry of Education, supplements the budgets of LEAs by paying 60% of the cost of education per child.

Along with national policies of education which empowered LEAs, the education policies which encouraged the integration of the middle class and the working class systems of education were also adopted to foster consistency between the management of education and the principles of nation building and state sovereignty. Among the policies were those that were initiated: by the 1902 Act which "abolished mass secondary education" that emphasized science and technical education and created "the public sector grammar schools" that offered the classical or grammar-type education; by the Fisher Act of 1918 which required the government to upgrade and pay teachers' salaries; and by the Education Act of 1944 which mandated free education. Since the existence of the two class systems of education limited the quality, the quantity and the type of education that children could access, the deliberate effort by the British government to

integrate the systems can only be understood as a government effort to expand education by granting British children free access to education.

In the 1980s and early 1990s, however, the Conservative government made changes in the organization of the British system of education which would have led the British government to usurp the management roles of the LEAs. The hallmark of the changes was the creation of the Grant Maintained (GM) schools which culminated from a series of legislation. The first piece of legislation was the 1980 Education Act which required parental representation on the school governing boards. The second legislation was the 1986 Education (No 2) Act which increased parental membership and decreed the recruitment of representatives of the business community as co-opted members of the governing boards (Bush, Coleman, & Glover, 1993). Until these changes were introduced, the school governing boards largely consisted of LEA representatives who were elected of political parties (Deem & Brehony, 1994).

The changes in the membership of school governing bodies were soon followed by legislation which created the GM schools. The legislation included the 1994 legislation which granted state maintained schools the option of "opting out" of LEA control. "Opting out" required parental approval through the ballot and the "approval from the secretary of state" (Anderson, 2000, p. 373). Schools which chose to "opt out" were granted the GM status which meant incorporation of the schools to reduce legal liability, direct financing of the schools by the government, and complete independence of the schools from LEAs (Anderson, 2000). The GM status also empowered the school governing bodies by granting them power with regard to employment, corporate

ownership, arbitration, the curriculum, assessment, and reporting (Bush, Coleman, & Glover, 1993).

By encouraging the creation of GM schools, the British government sought to break the long standing tradition of shared responsibility for education between the central government and the LEAs and, instead, establish the school based management system which could grant the government more direct control of education. Direct control of education by the government was especially signaled in the new arrangement by the fact that unlike the LEA schools, the GM schools were to be fully dependent on the government for funding as their governing bodies would not have power to tax for education. Whether the GM schools would have addressed concerns about the competitiveness of the British workforce internationally which led to their creation may never be known since the movement toward the transformation of all state schools to GM schools was scuttled by the Labor Party which campaigned against the schools and, upon coming to power in 1997, abolished them (Anderson, 2000). Based on previous mass schooling research, however, direct control of education by states which, as was the case with the establishment of the GM schools, comes under the guise of quality control, undermine mass schooling by limiting the quantity, the quality and the type of education that children can access (Burns, Hage, Garnier, 2004; Hage & Garnier, 1992; Ramirez & Meyer, 1980). As is argued in this review of mass schooling research, such policies undermine, rather than foster, nationalism

Unlike the organization of education in Great Britain, the organization of education in the United States is so decentralized that there is no formal national system of education (Soysal & Strang, 1989). Like the British government, however, the United

States federal government has historically intervened in education to promote state and local management of education that is consistent with the principles of nation building and state sovereignty. Among the most recent interventions is the affirmative action policy which abolished discrimination in education based on "race, color, religion, sex, or national origin" (Yates, 1993, p. 40). The adoption of the policy was encouraged by the *Brown v. Board of Education* case in which segregated education based on the doctrine of separate but equal was declared illegal (Alexander & Alexander, 1998; Kaplin & Lee, 1995). Other recent interventions include the 1974 passage of the Equal Educational Opportunities Act "which requires that school systems develop appropriate programs for limited-English-proficiency students," the 1990 passage of Education of Individuals with Disabilities Act which mandated "free appropriate public education and related services" for children with disabilities; and the 1972 Education Amendment Act (Title IX) which prohibited educational programs that discriminated on the basis of gender (Alexander & Alexander, 1998, pp. 302, 871).

Centralized Organization of Education

Governments could, alternatively, adopt national policies of education which assume centralized organization of education. If they do, the management of education functions such as the recruitment and discipline of teachers, the provision of school facilities, the development of the curriculum, and testing would be the responsibility of central governments. Thus, the organization of national systems of education would be premised on the assumption that educational expansion is a function of the fiscal, legislative and political strength of the states. Since, however, state strength is not associated with mass schooling (Meyer & Ramirez, 1980), the organization of national

systems of education would be based on a faulty premise as, rather than expand education to the masses, the systems would constrain education. The outcome of education would then be stratified national polities which emphasized tradition by empowering special economic, political and social interest groups instead of integrated progress-oriented nations which could grant states the sovereign power that they need to compete for economic and military superiority.

The organization of education is thus an important factor of educational expansion. Some of the studies that suggested the relationship between the organization of education and educational expansion include the Maynes (1985) study which investigated the reasons for the high enrollment which led to overcrowding in schools in the predominantly protestant Northern Baden region of Germany and the low school enrollment in the predominantly Catholic Vaucluse region of France between 1750 and 1850; the Fuller, Hage, Garnier, and Sawicky (1992) study which investigated the reasons for the rapid primary school enrollment growth in France between 1837 and 1881; and the Soysal and Strang (1989) study which investigated why the first national systems of education that were in fact systems of mass schooling were established in some European countries but not in others in the 19th Century.

Religion in Public Schools

Commitment to the principles of nation building and state sovereignty has historically generated conflict between church and state over control of education. Until the principles were introduced in Western Europe and the United States in the late 18th Century and throughout the 19th Century and around the world in the 20th Century, education was largely controlled by the church which used it for the purpose of achieving

both the worldly mission of advancing the sectarian interests of the church and the heavenly goal of creating citizens of the kingdom of heaven as opposed to citizens of this world (Meyer, Ramirez, & Soysal, 1992; Ramirez & Boli, 1987; Soysal & Strang, 1989). With the introduction of the principles, however, these goals of education were blamed for the weaknesses that states exhibited in their quest for economic and military superiority because they emphasized difference rather than integration (Ramirez & Boli, 1987) and promised the kingdom of heaven rather than economic, political, and social progress in this world (Meyer, Ramirez, & Soysal, 1992). In order to strengthen the states, therefore, the nationalists championed the establishment of integrating secular national systems of education which articulated "a secular vision of progress in which action and achievement take place in this world, not in some transcendental cosmos" (Meyer, Ramirez, & Soysal, 1992, p. 131). As would be expected, this secular vision of education set the stage for conflict between the state which was to provide the new education and the church which considered it "an evil by-product of modernity" (Ramirez & Boli, 1987, p. 5).

The conflict was, however, more pronounced in Western Europe where, when states lost in their competition for economic and military superiority in the 19th Century, nationalists actively clamored for mass schooling as a means to nation building and state sovereignty (Ramirez & Boli, 1987). In Kenya, the conflict has remained low despite the fact that Kenya is among Third World countries which are dominated economically, technologically and militarily by developed nations. The low conflict suggests that the Kenyan nationalist movements which led the struggle for independence were not inspired by the principles of nation building and state sovereignty. If they were, post-

independence Kenya would have witnessed active nationalist clamor for the establishment of a secular state financed national system of education which, in fact, expanded education to the masses. The result of the clamor would have been high conflict over control of education between the church which used education to create members who were loyal, first and foremost, to their denominations and to the Kingdom of heaven and the new independent Kenyan government which would have established the proposed national system of education for the purpose of creating individuals who were loyal, first and foremost, to the Kenyan state.

The low conflict between the Kenyan government and the church suggests, therefore, that church-control of education in Kenya was, before and after independence, not threatened by African nationalism. If this was indeed the case, the low conflict could have been the result of a church-state partnership which granted the church a role to play in public education. In Kenya, for example, the government statutorily recognized the church as the sponsor of the public schools that were nevertheless founded by the church. The partnership is significant because, against the principles of nation building and state sovereignty, the government of Kenya initiated it for the purpose of encouraging the church to contribute towards the cost of public education. Given the contradiction between the religious and the nationalist goals of education, however, the partnership may have undermined, rather than expand education in Kenya.

In order to transform the Kenyan national system of education into a secular institution which could build an integrated progress-oriented Kenyan nation and create a sovereign Kenyan state, therefore, Kenya needs nationalists who could champion educational reforms based on the principles of nation building and state sovereignty. The

reforms are necessary for several reasons. First, Kenya does not have a state church which could manage education on behalf of the government as was the case in Denmark, Great Britain, Norway, Prussia and Sweden (Ramirez & Boli, 1987; Soysal & Strang, 1989). Second, religion emphasizes difference rather than integration as was the case in the United States where the mostly protestant public schools discriminated against the mostly catholic immigrants from Eastern, Southern and Central Europe (Fuller, 1983; Ralph & Rubinson, 1980; Walters, 1984; Walters, McCammon, & James, 1990). Third, religion does not foster national progress as was evidenced in France where the 19th Century resistance to state-control of education by the Roman Catholic Church resulted in high enrollments but little national progress. This argument is validated by the military defeat of France by Germany in 1870 (Ramirez & Boli, 1987; Soysal & Strang, 1989). As already indicated, the French nationalists attributed the German victory to the "Prussian schoolmaster" and demanded secular state financed "primary education as a means to national renewal" (Reisner, 1922, cited in Ramirez & Boli, 1987, p. 8)

National Systems of Education as Decentralized Units of a World Institution that is Purposed to Create Individual Members of an Integrated World Polity

Whether the Kenyan national policies of education are consistent with the principles of nation building and state sovereignty also depends on whether the policies assume the Kenyan national system of education to be a decentralized unit of a world institution that is purposed to create individual members of an integrated world polity. If they do, the Kenyan national system of education would offer the universally accepted academic curriculum consisting of mathematics, science, language, geography, history,

civics, and physical education (Benavot, Cha, Kamens, Meyer, & Wong, 1991). The curriculum would be academic because, as a nation building tool, the objective of the Kenyan national system of education would be to train the mind – a broad, rational, national and universalistic mind (Benavot, Cha, Kamens, Meyer, & Wong, 1991; Meyer, Tyack, Nagel, & Gordon, 1979). This objective would be consistent with the global mass schooling objective which is to create individual members of an integrated progress-oriented world polity by granting future adult individuals freedom from ignorance which comes through education, freedom from political domination which comes with the destruction of aristocratic governments, and freedom from sloth which comes with the destruction of the old-world customs (Meyer, Tyack, Nagel, & Gordon, 1979).

In contrast to the education-expanding policies that would result in members of an integrated world polity would be policies which were designed to serve the economic, political and social interests of Kenya. Such policies would constrain education by encouraging the inclusion in the curriculum of subjects which are not universally accepted. The curriculum offered by the Kenyan national system of education would, for example, include religion through which difference rather than integration would be emphasized and technical education which would undermine the mass schooling mission of providing generalized education that equipped future adult individuals with a broad, rational, national and universalistic mind (Benavot, Cha, Kamens, Meyer, & Wong, 1991; Meyer, Tyack, Nagel, & Gordon, 1979). Whether the educational policies of the Kenya government assume the Kenyan national system of education to be a decentralized unit of a world institution which is purposed to create individual members of an integrated world polity is thus important for the expansion of education in Kenya.

Chapter Summary

In this chapter is a deduction from mass schooling research of five guidelines based upon which national policies of education which are consistent with the principles of nation building and state sovereignty could be made. The guidelines are: (a) that national policies of education be explained by factors external to national polities, (b) that national policies of education assume state control of education, (c) that national policies of education assume decentralized national systems of education, (d) that national policies of education assume secular national systems of education, and (e) that national policies of education assume national systems of education to be decentralized units of a world institution that is purposed to create individual members of an integrated world polity. National policies of education that are based on these guidelines would foster mass schooling by limiting educational expansion (a) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992) and (b) based on the number of people who are educated relative to the size of the school age population that is yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992). The result would be progress-oriented national polities that are aggregates of individuals and sovereign states which could compete for economic, technological and military superiority.

Chapter 3: Methodology

In this chapter is a discussion of the methods that were employed to investigate whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty. The methods included (a) specifying the study population and (i) its educational expansion characteristics, (ii) its state-strength characteristics, and (iii) its economic development characteristics that were the variables of study; (b) specifying a suitable statistical technique for data analysis, (c) specifying the data screening procedures, and (d) specifying the data analysis procedures.

The Study Population

This study was a survey of 62 of the 75 districts for which the Ministry of Education, Science and Technology (MoEST) reported educational data for public primary education in Kenya. The districts were selected because they had complete data for the educational expansion, the state strength and the economic development characteristics that were analyzed. The listing of the districts was obtained from the website of MoEST at www.education.go.ke/resources.htm. Among the 62 districts were 57 districts which were part of the 69 districts that constitute one of the five hierarchically organized administrative units of the provincial administration (Central Bureau of Statistics, 2002) and five municipal councils which, together with many other municipal councils, county councils, town councils, and urban councils formed the loosely organized local government administration. The five municipal councils included Thika Municipality, Nakuru Municipality, Kitale Municipality, Eldoret Municipality, and Kisumu Municipality. The 62 districts are shown with their educational expansion characteristics in Table 2 and with their state-strength and economic development

Table 2

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Kiambu	97.03	96.47	96.10	95.90	70.40	80.60
Kirinyaga	104.60	105.57	106.60	108.00	52.70	60.70
Murang'a	114.33	113.53	115.40	116.00	25.60	31.10
Maragua*	117.73	122.77	119.60	122.70		
Nyandarua	107.10	109.63	112.30	114.70	63.80	73.70
Nyeri	109.27	110.50	106.60	108.00	69.20	79.50
Thika	82.83	81.57	93.00	90.90	59.80	70.70

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Kilifi	76.57	72.53	91.60	75.70	31.80	26.60
Malindi*	86.33	82.43	88.30	68.30		
Kwale	79.53	75.10	97.30	79.70	41.80	37.80
Lamu	101.90	105.43	101.80	97.90	48.50	48.10
Mombasa	61.87	91.10	64.00	61.60	58.50	53.90
Taita Taveta	107.10	108.53	109.40	108.40	59.80	63.70
Tana River	47.77	45.13	58.70	44.60	27.10	24.30

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Embu	105.80	103.37	109.20	109.10	61.30	82.80
Isiolo	62.87	62.93	71.60	65.30	39.90	34.00
Kitui	115.27	115.57	124.30	123.90	64.10	69.30
Machakos	118.23	119.53	126.00	124.60	65.30	73.50
Makueni	116.73	116.83	124.70	121.10	58.70	37.80
Marsabit	50.87	49.53	61.00	48.90	48.10	39.40
Mbeere	114.20	117.50	110.30	116.00	45.40	55.90

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Meru Central	99.43	101.17	102.70	104.10	56.90	69.10
Meru North	96.50	96.67	107.30	110.60	34.80	40.80
Meru South*	103.13	102.10	110.90	109.50		
Moyale	82.10	76.83	93.80	63.80	61.30	35.40
Mwingi	109.43	111.43	122.20	124.00	48.60	53.40
Tharaka*	122.23	123.80	132.20	136.00	14.80	16.70
Nairobi	81.70	64.73	86.50	50.60	314.20**	98.50

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Garissa	9.77	9.50	10.90	6.30	50.30	45.10
Mandera	22.67	18.57	31.80	15.80	48.00	36.20
Wajir	14.63	4.87	16.80	10.50	86.80	82.00
Ijara*	9.77	9.50	10.90	6.30		
Bondo*	121.20	123.33	125.40	125.00		
Gucha*	94.93	95.97	106.60	108.20		
Homa Bay	115.13	112.70	137.70	129.00	33.80	23.30

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Kisii	98.03	98.60	102.20	102.00	30.00	29.70
Kisumu	46.40	44.87	47.30	44.60	18.10	16.70
Kuria	114.50	115.63	127.70	121.50	57.80	42.00
Migori	124.37	119.50	135.20	125.10	60.00	42.60
Nyamira	100.33	99.80	106.10	104.70	78.80	80.70
Nyando*	114.20	116.70	127.20	124.50		
Rachuonyo*	127.33	128.57	150.10	145.90		

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Siaya	111.73	112.77	124.30	121.30	34.80	30.00
Suba	113.17	108.90	123.80	116.70	89.90	45.80
Baringo	96.87	96.90	102.90	99.90	91.70	93.60
Bomet	101.90	101.90	107.00	106.60	42.10	42.20
Buret*	112.27	111.73	117.40	115.10		
Kajiado	66.90	64.83	74.10	63.90	54.40	52.40
Keiyo	137.90	138.90	138.90	141.80	68.60	79.40

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Kericho	112.63	109.13	116.90	110.40	53.00	52.30
Koibatek	113.60	116.00	126.10	129.70	73.80	81.30
Laikipia	89.83	90.43	95.30	92.40	58.50	63.90
Marakwet*	124.00	124.40	129.00	130.60	68.90	76.50
Nakuru	78.40	80.23	80.50	85.80	12.70	69.50
Nandi	108.27	106.67	117.40	116.30	57.10	61.30
Narok	72.17	70.27	86.10	75.30	51.20	46.80

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Samburu	61.97	55.63	77.00	57.70	40.80	28.70
Trans Mara	80.87	82.90	90.80	87.20	14.30	11.00
Trans Nzoia	96.53	96.13	107.10	107.20	182.70**	193.00**
Turkana	34.63	31.43	38.50	28.40	24.90	17.50
Uasin Gishu	110.55	73.40	74.50	74.60	53.50	58.90
West Pokot	124.33	81.03	112.60	82.90	51.20	43.30
Bungoma	115.53	115.37	129.70	129.70	53.60	50.70

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Busia	102.90	101.17	115.20	112.90	42.40	35.30
Butere-Mumias*	91.83	91.97	89.00	88.10		
Kakamega	108.93	109.40	119.00	121.00	21.30	23.40
Lugari-Malava*	110.87	111.77	123.70	127.50		
Mt. Elgon	133.09	132.43	136.00	134.30	57.10	52.00
Teso	103.87	100.90	120.30	111.60	54.40	49.00
Vihiga	81.03	79.37	122.20	122.60	47.60	55.00

Table 2 (Continued)

The Districts of Kenya and Their Selected Educational Expansion Characteristics in Ratios

District	Educational Expansion Characteristics in Ratios					
	Average Public Primary Education Gross Enrollment Ratios for 2000-03		Public Primary Education Gross Enrollment Ratios for 2003		Public Primary Education Completion Rates for the Class of 2003	
	Boys	Girls	Boys	Girls	Boys	Girls
Thika Mun	82.83	81.57	93.00	90.00	73.30	91.60
Nakuru Mun	78.40	80.23	80.50	85.80	96.40	98.10
Kitale Mun	96.53	96.13	107.10	107.20	49.00	62.00
Eldoret Mun	73.70	73.40	74.50	74.60	81.10	86.20
Kusumu Mun	73.70	73.40	74.50	74.60	59.70	62.40

Note: *Districts excluded from multiple regression analysis because of incomplete data

**Values reduced to 100.00 which was considered the ceiling for public primary education completion rates

public primary education completion rates

characteristics in Table 3. These characteristics were the variables of study. As suggested by the data, all the variables were continuous.

The Statistical Technique for Data Analysis

The selected statistical technique for analyzing data was the multiple regression analysis. The technique was selected because of two reasons. First, it is the recommended technique when, as was the case in this study, all the variables are continuous (Bohrnstedt & Knoke, 1994; Isaac & Michael, 1995). Variables are continuous if, theoretically, they can "take on all possible numerical values in a given interval" (Bohrnstedt & Knoke, 1994, p. 20; Isaac & Michael, 1995). Second, the technique is recommended when hypothesis testing involves testing relationships between phenomena (Bohrnstedt & Knoke, 1994; Isaac & Michael, 1995). In this study, whether the Kenyan national policies of education were consistent with the principles of nation building and state sovereignty was examined by testing the relationship between the six educational expansion variables and the two state-strength and two economic development variables shown in Table 5.

Data Screening

Data screening consists of procedures for evaluating and addressing issues that underlie data analysis (Afifi, Clark, & May, 2003). In this study, data were screened (a) to determine and address the problem of missing values, (b) to assess the statistical characteristics of the variables of study and (c) to assess consistency with multiple regression analysis assumptions.

Missing Values

Missing values as a result of missing data for some cases is a problem in regression analysis because of the tendency by "standard packaged programs" to exclude

Table 3

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Kiambu	34.60	37.00	48.80	20.53
Kirinyaga	31.20	33.00	12.60	12.90
Murang'a	31.10	41.00	19.80	9.39
Maragua*	41.70	34.00	24.40	9.17
Nyandarua	33.00	34.00	16.10	7.85
Nyeri	30.90	33.00	39.30	12.83
Thika	32.60	38.00	34.40	20.10

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Kilifi	39.60	53.00	31.10	9.90
Malindi*	44.00	75.00	43.40	12.09
Kwale	35.70	54.00	15.70	8.61
Lamu	25.90	44.00	23.50	10.64
Mombasa	35.70	40.00	100.00	26.04
Taita Taveta	34.70	43.00	40.80	13.07
Tana River	23.00	37.00	8.70	6.17

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Embu	26.30	29.00	40.00	13.75
Isiolo	23.20	32.00	45.90	8.94
Kitui	32.10	41.00	21.30	8.99
Machakos	35.00	39.00	43.70	13.14
Makueni	33.90	39.00	17.70	10.80
Marsabit	32.10	39.00	14.70	4.83
Mbeere	28.20	31.00	1.90	10.51

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Meru Central	23.00	25.00	2.60	14.80
Meru North	36.80	49.00	2.90	8.16
Meru South*	13.80	25.00		
Moyale	50.80	59.00	46.10	6.08
Mwingi	31.70	41.00	22.00	9.60
Tharaka*	27.10	33.00		
Nairobi	33.70	45.00	100.00	30.98

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Garissa	36.70	56.00	21.10	3.58
Mandera	43.60	65.00	19.20	4.01
Wajir	51.30	57.00	23.60	2.82
Ijara*				
Bondo*	32.10	47.00	14.60	7.56
Gucha*	26.80	46.00	29.40	5.07
Homa Bay	29.80	47.00	20.00	5.03

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Kisii	34.40	39.00	26.50	7.01
Kisumu	33.20	47.00	65.10	14.05
Kuria	36.60	54.00	99.60	4.90
Migori	34.20	51.00	52.20	7.09
Nyamira	30.20	41.00	20.20	7.69
Nyando*	33.70	44.00	25.50	10.16
Rachuonyo*	32.50	50.00	28.60	6.10

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Siaya	37.80	57.00	23.40	6.18
Suba	31.70	45.00	30.80	8.04
Baringo	17.50	24.00	8.80	7.74
Bomet	39.90	61.00	22.60	5.87
Buret*	34.90	45.00	.36	15.85
Kajiado	35.10	39.00	22.10	14.03
Keiyo	28.70	34.00	17.30	9.43

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Kericho	36.30	52.00	33.00	13.39
Koibatek	20.60	35.00	26.40	11.23
Laikipia	27.10	33.00	35.60	12.55
Marakwet*	30.90	50.00		
Nakuru	36.60	43.00	47.00	16.41
Nandi	31.90	38.00	22.10	11.30
Narok	34.00	49.00	12.70	6.31

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Samburu	30.70	51.00	27.30	4.88
Trans Mara	34.20	68.00	4.30	4.82
Trans Nzoia	39.60	52.00	15.00	12.32
Turkana	39.90	56.00	13.90	3.20
Uasin Gishu	34.50	44.00	45.20	14.76
West Pokot	48.50	60.00	21.70	3.66
Bungoma	41.70	50.00	29.80	7.19

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Busia	34.70	53.00	38.00	5.94
Butere-Mumias*	36.30	58.00	24.10	36.23
Kakamega	35.70	60.00	16.60	8.70
Lugari-Malava*	11.50	50.00	16.60	8.06
Mt. Elgon	36.10	60.00	6.90	4.47
Teso	33.00	51.00	26.70	6.57
Vihiga	40.40	47.00	13.30	7.88

Table 3 (Continued)

The Districts of Kenya and Their Selected State-Strength and Economic Development Characteristics

District	State-Strength Characteristics		Economic Development Characteristics	
	Public Primary Education Pupil/Teacher Ratios		% Population Living in Towns in 1999	%Population in Wage Employment in 1999
	2000	2003		
Thika Mun	32.10	30.00	100.00	28.44
Nakuru Mun	34.70	48.00	100.00	16.29
Kitale Mun	30.00	33.00	100.00	28.09
Eldoret Mun	32.20	38.00	100.00	16.84
Kusumu Mun	35.80	50.00	100.00	11.61

Note: *Districts excluded from multiple regression analysis because of incomplete data

cases with missing values (Afifi, Clark, & May, 2003, p. 197). As a result, an important consideration in addressing the problem is whether the inclusion of all cases in the analysis is important to the study. In this study, the importance of including all cases in multiple regression analysis depended (a) on the number of missing values relative to the size of the population and (b) on the type of missing values.

The Number of Missing Values

The number of missing values relative to the size of the population was an important determinant of the need to include all cases in multiple regression analysis because, based on it, the results of the analysis would either be biased or unbiased (Afifi, Clark, & May, 2003; Hill, 1997). If the number of missing values was small, the inclusion of all cases in the analysis would not be important to the study because the generated estimates of multiple regression parameters would not be biased. In this case, the problem of missing values would be addressed by limiting data analysis to cases with complete data (*complete case analysis strategy*). If, however, the number of missing values was large, the inclusion of all cases in the analysis would be important and the *data imputation strategy* would be the choice strategy for addressing the problem of missing data.

In this study, 13 districts were missing the values for the boys public primary education completion rates for 2003 variable, the values for the girls public primary education completion rates for the class of 2003 variable or the values for the percentage of the population living in towns in 1999 variable. This number was considered small because it was only 17.3% of the 75 districts for which MoEST reported educational data. The decision to limit multiple regression analysis to the 62 districts that had complete

data was thus partly based on the fact that only a small number of variable values were missing.

The Type of Missing Values

Whether the inclusion of all cases in multiple regression analysis is important to a study also depends on whether the missing values are typified as missing completely at random (MCAR), missing at random (MAR) or missing not at random (MNAR) (Afifi, Clark, & May, 2003; Hill, 1997; Tabachnick, 2005). Missing values are typified as MCAR if "being missing is independent of both Y and X" (Afifi, Clark, & May, 2003, p. 198). In other words, the missing values of the dependent variable, Y, should not be dependent on the independent variable, X, and *vice versa*. When the missing values are MCAR, therefore, the cases for which data are missing are considered "a random sub sample of the original sample" (Afifi, Clark, & May, 2003, p. 198). In such a case, the inclusion of all cases in the analysis is not important to the study because the outcome of the analysis would be the "unbiased estimates of the regression parameters" ((Afifi, Clark, & May, 2003, p. 199).

Like in the case of MCAR, the inclusion of all cases in the analysis is not important to a study when the missing values are of the MAR type. Missing values are typified as MAR when "the probability that Y is missing depends on the value of X but not Y" (p. 199). In other words, missing values are MAR "if the mechanism causing the data to be missing is unrelated to the parameters to be estimated" (p. 199). Such a mechanism is referred to as an *ignorable mechanism* since, although *complete case analysis* can result in biased "estimates of the mean and variance of Y, the estimates of

the regression line may be satisfactory" (Little & Rubin, 2002 cited in Afifi, Clark, & May, 2003, p. 200).

In contrast to the MCAR and the MAR types of missing data, the MNAR type of missing data can result in biased estimates of regression parameters if data analysis is limited to cases with complete data. As a result, the inclusion of all cases in an analysis is important when missing values are of the MNAR type. The MNAR type of missing data occurs when "being missing is related to both X and Y" (Afifi, Clark, & May, 2003, p. 199). In other words, *nonrandom missing values* occur when both the independent variable, X, and the dependent variable, Y, cause *item nonresponse* that may include responses such as "'don't knows' or missing values that are difficult or impossible to relate clearly to any variable" (Afifi, Clark, & May, 2003, p. 199). This mechanism of being missing is considered a *nonignorable mechanism* ostensibly because limiting data analysis to complete cases can result in biased estimates of regression parameters.

In this study, the missing values were determined to be MCAR through Little's MCAR test. The test was obtained through the expectation maximization (EM) method of the missing values analysis (MVA) procedure which was generated by SPSS 13.0. The result of the test, $p = .814$, suggested that the missing values were not significantly different from MCAR $(p < .05)$. This result suggested that the districts which did not have complete data were "a random sub sample of the original sample" (Afifi, Clark, & May, 2003, p. 198) and could, therefore, be excluded from multiple regression analysis without adversely affecting the results of the analysis. The excluded districts included Maragua, Malindi, Meru South, Tharaka, Ijara, Bondo, Gucha, Nyando, Rachuonyo, Buret, Marakwet, Butere-Mumias, and Lugari-Malava. Of these districts, Ijara District

was excluded from the missing values analysis because it was neither listed in the *Statistical Abstract for 2002* which provided data for the percentage of the population living in towns in 1999 nor in the Volume II of the 1999 Population and Housing Census which provided data for the percentage of the population in wage employment in 1999. Apart from the number of missing values relative to the size of the population, therefore, the decision to limit multiple regression analysis to the 62 districts that had complete data was also justified by the determination that the missing values were MCAR.

The Study Variables and their Descriptive Statistics

As suggested in the preceding discussion of *missing values*, the decision to limit data analysis to districts with complete data (complete case analysis) was implemented by excluding the districts that did not have complete data (deletion of cases) rather than by deleting the variables that had missing values (deletion of variables) (Afifi, Clerk, & May, 2003; Tabachnick, 2005). The deletion of cases was preferred to the deletion of variables, first, because the number of missing values was small, second, because the missing values were not significantly different from MCAR and, third, because all the selected educational expansion, state strength, and economic development characteristics shown in Table 5 were theoretically important to this study. As variables of study, the characteristics were classified as dependent, independent, or control variables.

The Dependent Variables

The educational expansion characteristics shown in Table 5 were the dependent variables. The variables included (a) two average public primary education gross enrollment ratios for 2000-03 variables, (b) two public primary education gross

enrollment ratios for 2003 variables, and (c) two public primary education completion rates for the class of 2003 variables.

Average Public Primary Education Gross Enrollment Ratios for 2000-03 Variables

Gross enrollment is a quantitative measure of mass schooling (Benavot & Riddle, 1988) that is defined as "the number of pupils enrolled in the given level of education, regardless of age expressed as a percentage of the population in the relevant official age-group" (UNESCO Institute of Statistics, 2004). The two average public primary education gross enrollment ratios for 2000 - 03 variables were (a) the average boys public primary education gross enrollment ratios for 2000 – 03 and (b) the average girls public primary education gross enrollment ratios for 2000 - 03. While the means of the variables, 89.76 for the average boys public primary education gross enrollment ratios for 2000 – 03 and 87.96 for the average girls public primary education gross enrollment ratios for 2000- 03, suggested that most Kenyan children were enrolled for public primary education, the minimum and the maximum enrollment ratios suggested, however, that there were significant differences between districts. The statistical descriptions of the variables are shown in Table 4.

The Public Primary Education Gross Enrollment Ratios for 2003 Variables

The public primary education gross enrollment ratios for 2003 variables were especially important in this study because the National Rainbow Coalition (NARC) Party replaced the Kenya African National Union (KANU) Party as the governing party in December, 2002 and proclaimed free public primary education for all children effective

Table 4

Descriptive Statistics: The Dependent Variables

Variable	Mean	Median	Minimum	Maximum	N
The average boys public primary education gross enrollment ratios for 2000- 03	89.75	95.55	11.28	136.95	62
The average girls public primary education gross enrollment ratios for 2000- 03	87.96	96.01	9.10	138.90	62
The boys public primary education gross enrollment ratios for 2003	97.96	106.35	10.90	138.90	62
The Girls public primary education gross enrollment ratios for 2003	93.20	104.40	6.30	141.80	62
The boys public primary education completion rates for 2003	54.28	54.00	12.70	100.00	62
The girls public primary education completion rates for 2003	54.56	52.35	11.00	100.00	62

January, 2003. The two public primary education gross enrollment ratios for 2003 variables were (a) the boys public primary education gross enrollment ratios for 2003 and (b) the girls public primary education gross enrollment ratios for 2003. As the descriptive statistics of the variables shown in Table 4 suggest, Kenya realized higher enrollment ratios in 2003 as the mean for the boys public primary education gross enrollment ratios for 2003 variable was 97.96 and that for the girls public primary education gross enrollment ratios for 2003 variable was 93.20. The minimums of the variables, 10.90 for the boys public primary education gross enrollment ratios for 2003 and 6.30 for the girls public primary education gross enrollment ratios for 2003 suggested, however, that some districts just barely had their children enrolled in school.

Public Primary Education Completion Rates for the Class of 2003 Variables

The public Primary education completion rate was defined as the percentage of the number of pupils who were enrolled in standard 1 in 1996 and completed the primary education cycle eight years later by taking the Kenya Certificate of Primary Education (KCPE) in 2003. The variables were, therefore, assumed to be measures of *attendance* which is also a measure of mass schooling (Walters, McCammon, & James, 1990). The two public primary education completion rates for the class of 2003 variables were (a) the boys public primary education completion rates for the class of 2003 and (b) the girls public primary education completion rates for the class of 2003. The means of the variables, as shown in table 4, hovered around 50% suggesting that almost half of the children who were enrolled in school in standard 1 in 1996 dropped out before completing the primary education cycle. The minimums for the variables, 12.70 for the boys public primary education completion rates for the class of 2003 variable and 11.00

for the girls public primary education completion rates for the class of 2003 variable were far below the means. The minimums suggested, therefore, that there were significant between-district disparities in completion rates. The ceiling for graduation rates was considered to be 100%. Therefore, as suggested in Table 2, variable values above 100% were assigned the value of 100.00 in data analysis.

The Independent Variables

The independent variables were the public primary education pupil/teacher ratios variable for 2000 and the public primary education pupil/teacher ratios variable for 2003. The pupil/teacher ratio was defined as the number of pupils assigned to one teacher. The variables served (a) as proxies of the principles of nation building and state sovereignty that the world institution theorists associate with mass schooling and (b) as a state strength measure of the quality of public primary education that children could access. The variables were proxies of the principles of nation building and state sovereignty because they represented state intervention in education which was a European nationalist (Boli, Ramirez, & Meyer, 1985; Ramirez & Boli, 1987) and American republican (James & Walters, 1990; Walters & O'Donnell, 1988) idea of expanding education to the masses in the late 18th Century and throughout the 19th Century. As representations of state strength, the variables were used to test the argument by the supply of schooling theorists that educational expansion was a function of the strength of the state.

The means of the variables suggested that, on average, one teacher was assigned to about 34 pupils in 2000 and about 45 pupils in 2003. The minimum and the maximum statistics suggested some districts had very low pupil/teacher ratios, 17.50 in 2000 and

24.00 in 2003 while others had significantly high pupil/teacher ratios, 51.30 in 2000 and 68.00 in 2003. These statistics showed too that the free public primary education policy which the NARC government adopted in 2003 led to increases in school enrollment but that little was done to increase the number of teachers to match the increased enrollments. The descriptive statistics for the variables are shown in Table 5.

The Control Variables

The control variables were the two economic characteristics shown in Table 4B. The variables, the percentage of the population living in towns in 1999 and the percentage of the population that was in wage employment in 1999, indicated the extent to which the organization of the Kenyan economy was individualistic. The variables were used to test the human capital theory that urbanization generates mass schooling because of its high demand for skilled workers that compels investment in education. As suggested by their means, 34.80 for the percentage of the population living in towns in 1999 and 10.63 for the percentage of the population that was in wage employment in 1999, only about 35 percent of the Kenyan population lived in towns in 1999 and only bout 11% was in wage employment. The minimum statistics of 1.90 for the percentage of the population living in towns in 1999 and 2.82 for the percentage of the population that was in wage employment in 1999 suggested that some districts barely had towns while others, mainly the municipalities for which MoEST reported educational data had town populations of 100%. These statistics are shown in Table 5.

The Multiple Regression Analysis Assumptions

The assumptions of multiple regression analysis vary based on whether the dependent variables (Y) and the independent variables (X) are fixed (the fixed effects

Table 5

Descriptive Statistics: The Independent and the Control Variables

Variable	Mean	Median	Minimum	Maximum	N
The Independent Variables					
The public primary education pupil/teacher ratios for 2000	33.80	34.10	17.50	51.30	62
The public primary education pupil/teacher ratios for 2003	44.58	44.00	24.00	68.00	62
The Control Variables					
The percentage of the population living in towns in 1999	34.80	23.55	1.90	100.00	62
The Percentage of the population in wage employment in 1999	10.63	9.19	2.82	30.98	62

model) or random (the random effects model) (Afifi, Clark, & May, 2003; Green, Salkind, & Akey, 2000). The fixed effects model is generally recommended for experimental studies while the random effects model is suitable for non-experimental studies (Green, Salkind, & Akey, 2000). Since the current study is non-experimental, therefore, the *random effects model* was deemed appropriate. As a result, the assumptions against which the variables were evaluated were the assumptions of the *random effects model*. The assumptions included: (a) that the variables are multivariately normally distributed in the population and (b) that the cases represent a random sample from the population and the scores on the variables are independent of other scores on the same variables (Green, Salkind, & Akey, 2000).

The Normality Assumption

The normality assumption "is sometimes not crucial to the validity of the results" (Afifi, Clark, & May, 2003, p. 53). In other words, the normality assumption can be violated without necessarily compromising the integrity of multiple regression analysis. Nevertheless, the assumption is important to multiple regression analysis and checking whether variable data are normally distributed "is advisable in the early stages of analysis" (p. 53).

In this study, whether variable data were normally distributed was evaluated statistically by means of the Shapiro-Wilk *W* and/or the Kolmogorov *D* statistical tests and by visual evaluation of pertinent histograms. The normality statistical tests tested the hypothesis that the distribution of the variable values was not significantly different from normal. Both the tests and the histograms were generated by SPSS 11.0 for both the dependent and independent variables. The results of the tests are shown in Table 6 but the

Table 6

Kolmogorov D and Shapiro Wilk W Normality Significance Test Results for Variable Distributions

Variable	Kolmogorov *D*	Shapiro Wilk *W*
Public Primary Education Pupil/Teacher Ratios for 2000	.006	.011
Public Primary Education Pupil/Teacher Ratios for 2003	.200	. 178
Percentage of the population living in towns in 1999	.000	.000
Percentage of population in wage employment in 1999	.039	.000
Average boys public primary education gross enrollment ratios for 2000-03	.006	.001
Average girls public primary education gross enrollment ratios for 2000-03	.000	.001
Boys public primary education gross enrollment Ratios for 2003	.000	.000
Girls public primary education gross enrollment Ratios for 2003	.001	.000

Table 6 (Continued)

Kolmogorov *D* and Shapiro Wilk *W* Normality Significance Test Results for Variable Distributions

Variable	Kolmogorov *D*	Shapiro Wilk *W*
Boys public primary education completion rates for the class of 2003	.084	.230
Girls public primary education completion rates For the class of 2003	.200	.290

histograms are not shown. The results showed that all the variables except the class of 2003 boys public primary education completion rates variable, the class of 2003 girls public primary education completion rates variable and the public primary education pupil/teacher ratios for 2003 variable were statistically significantly different from normal as their Shapiro-Wilk *W* and Kolmogorov *D* test results respectively ranged from .000 to .001 ($p < .05$) and .000 to .039 ($p < .05$). Except for the public primary education pupil/teacher ratios for 2000 variable, all the variables could be transformed to proximate normality by using the *square root* or the *logarithmic transformation* if the variable distributions tended to be positively skewed; or by reversing (reflecting) variable values and then applying the square-root or the logarithmic transformation if the distributions were negatively skewed. The transformed variables, their transformations and their normality test results are shown separately in Table 7.

In this study, therefore, nine of the ten variables which were used to measure the expansion of public primary education in Kenya, the strength of the Kenyan state, and the economic development of Kenya either conformed or were induced to conformity with the normality assumption of multiple regression analysis. The use of the public primary education pupil/teacher ratios for 2000 variable which did not conform to the assumption was not considered a threat to the integrity of this study, however, because the normality assumption "is sometimes not crucial to the validity of the results" of regression analysis (Afifi, Clark, & May, 2003, p. 53). Nevertheless, the evaluation of whether the variables were normally distributed was important because of the implications of variable normality on the second assumption of the fixed-effects model of multiple regression analysis which is concerned with the randomness of the sample and the independence of

Table 7

The Transformed Values, Their Transformations, and their Kolmogorov D and Shapiro Wilk W Normality Test Results

Variable	Transformation	Kolmogorov *D*	Shapiro Wilk *W*
Percentage of the population living in towns in 1999	Logarithmic	.095	.004
Percentage of population in wage employment in 1999	Logarithmic	.200	.929
Average boys public primary education gross enrollment ratios for 2000-03	Square Root	.200	.262
Average girls public primary education gross enrollment ratios for 2000-03	Square Root	.067	.231
Boys public primary education gross enrollment ratios for 2003	Square Root	.200	.870
Girls public education gross enrollment ratios for 2003	Square Root	.168	.328

variable scores from other scores on the same variables.

The Randomness of the Sample and the Independence of Scores Assumption

As already stated, the randomness of the cases that constitute a sample and the independence of scores from other scores on the same variable is the second assumption of the random effects model of multiple regression analysis (Green, Salkind, & Akey, 2000). Clearly, the assumption has implications for the *F*-test for multiple regression analysis as its violation can cause the test to generate inaccurate *p*-values. It is imperative, therefore, that the assumption be met if valid multiple regression analysis results that can prevent "erroneous conclusions" are to be generated (Afifi, Clark, & May, 2003, p. 63).

In this study, concern about sampling was not applicable because the population rather than a sample was the unit of analysis. However, because one of the independent variables, the pupil/teacher ratios for 2000, was not normally distributed, it was possible that the assumed independence of scores could have been violated (Green, Salkind, & Akey, 2000). If the assumption was indeed violated, the relationship between the independent and the dependent variables would not be linear, hence, the inaccurate *p*-values that the *F*-test for multiple regression would generate.

In order to assess compliance with the independence assumption, therefore, an evaluation of whether the relationships between the dependent and the independent variables and between the dependent and the control variables were linear was conducted. The evaluation was facilitated by the scatter graphs and their R^2 statistics that were generated using the SPSS 11.0 statistical software. The use of both the R^2 and the scatter graphs was important because while the R^2 statistic suggested the strength of the relationships, the visual evaluation of the graphs would provide information regarding

whether or not a weak relationship was caused by the presence of non linear relationships. If non linear relationships were present, the variable scores would not be considered independent. The solution would be to attempt linearity induction or to use statistical techniques other than the multiple regression analysis to analyze the data. If, however, the relationships were weak but the graphs showed no evidence of non linear relationships, the assumption would be that the theoretical explanations of the relationships were weak. In this case, multiple regression analysis would still be a suitable statistical technique for data analysis and its results would be valid since the *p*-values that would be generated by the *F*-test would be accurate.

Based on the R^2 statistics, some of the relationships between the dependent and the independent variables and between the dependent and control variables were either weak as the R^2 statistics ranged from .0027 for the relationship between the percentage of the population that was in wage employment in 1999 and the girls public primary education gross enrollment ratios for 2003 to .2960 for the relationship between the percentage of the population that was in wage employment in 1999 and the girls public primary education completion rates for the class of 2003. Based on the scatter graphs, however, non linear relationships were not detected. Consequently, the weak relationships that the R^2 statistics suggested attributed to weaknesses in the theoretical explanation of the relationships and multiple regression analysis was deemed appropriate for data analysis.

Data Analysis

The regression models broadly tested the hypothesis that Kenyan national policies of education are consistent with the principles of nation building and state sovereignty.

The analysis involved developing eight multiple regression models. Each regression model utilized one of the six dependent variables, one of the independent variables and the two control variables. The six dependent variables included the average boys public primary education gross enrollment ratios for 2000, 2001, 2002 and 2003; the average girls public primary education gross enrollment ratios for 2000, 2001, 2002 and 2003; the boys public primary education completion rates for the class of 2003; the girls public primary education completion rates for the class of 2003; the boys public primary education gross enrollment ratios for 2003; and the girls public primary gross enrollment ratios for 2003. The independent variables were the public primary education pupil/teacher ratios for 2000 and the public primary education pupil/teacher ratios for 2003. The two control variables were the percentage of the population that lived in towns in 1999 and the percentage of the population that was in wage employment in 1999.

The multiple regression models were of the form $\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ where:

$\hat{Y}$ is the dependent variable

β_0 is the constant

β_1, β_2, and β_3 are the coefficients

X_1 is the independent variable

X_2 is the control variable, the percentage of the population living in towns in 1999

X_3 is the control variable, the percentage of the population in wage employment in 1999 and

ε is the random error which was "the difference between a subject's actual observed score on the criterion and the score predicted for that subject using the

regression equation" (Licht, 2000, p. 48). The models were generated using the SPSS 11.0 statistical package.

Chapter 4: Results

In this chapter is a report of the eight multiple regression models which were generated as part of the investigation of whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty. The models tested whether, controlling for economic development, the strength of the Kenyan state was related to the expansion of Kenya's public primary education. The models suggested that it was not since the only significant relationship between state strength and the expansion of public primary education was a negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable. The eight multiple regression models, the R^2 statistics which suggested the variance in the dependent variable that was explained by each of the models, the significance values of the explained variances and, the significance values of the variable coefficients which suggested the independent contribution of each variable to R^2 were as follows.

Regression Model 1

The purpose of this model was to explain the average boys public primary education gross enrollment ratios for 2000-03. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, average boys public primary education gross enrollment ratios for 2000-03

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios

for 2000

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 8. The model explained very little of the variance in the average boys public primary education gross enrollment ratios for 2000-03 and was not significant [$R^2 = .061$, adjusted $R^2 = .013$, $F(3, 58) = 1.258$, $p < .05$].

Regression Model 2

This model was developed to explain the average girls public primary education gross enrollment ratios for 2000-03. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, average girls public primary education gross enrollment ratios for 2000-03

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2000

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

Table 8

Regression Coefficients Model 1

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig
(Constant)	5.194	2.085		2.491	.016
Pupil/Teacher Ratios for 2000	.042	.045	.136	.938	.352
% of the Population in Wage Employment in '99	-1.085	1.297	.154	-.837	.406
% of the Population Living in Towns in '99	.780	.758	.154	1.028	.308
% of the Population in Wage Employment in '99	-1.085	1.297	-.132	-.837	.406

The results of the regression model are shown in Table 9. The model explained about 13% of the variance in the average girls public primary education gross enrollment ratios for 2000-03 and was significant [$R^2 = .129$, adjusted $R^2 = .084$, $F(3, 58) = 2.854$, $p < .05$].

Regression Model 3

The purpose of the model was to explain the boys public primary education completion rates for the class of 2003. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, the boys public primary education completion rates for the class of 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2000

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 10. The model explained about 12% of the variance in the boys public primary education completion rates for the class of 2003 and was significant [$R^2 = .117$, adjusted $R^2 = .071$, $F(3, 58) = 2.557$, $p < .05$].

Table 9

Regression Coefficients Model 2

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	4.834	2.073		2.332	.023
Pupil/Teacher Ratios for 2000	.065	.045	.203	1.452	.152
% of the Population Living in Towns in '99	1.069	.754	.205	1.419	.161
% of the Population in Wage Employment in '99	-1.690	1.289	-.200	-1.311	.195

Table 10

Regression Coefficients Model 3

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	23.934	21.019		1.139	.260
Pupil/Teacher Ratios for 2000	-.034	.455	-.011	-.075	.941
% of the Population Living in Towns in '99	9.977	7.645	.189	1.305	.308
% of the Population in Wage Employment in '99	-.085	1.297	-.132	-.837	.169

Regression Model 4

The model was designed to explain the girls public primary education completion rates for the class of 2003. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, the girls public primary education completion rates for the class of 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2000

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 11. The model explained about 30% of the variance in the girls public primary education completion rates for the class of 2003 and was significant [$R^2 = .297$, adjusted $R^2 = .260$, $F(3, 58) = 8.153$, $p < .05$].

Regression Model 5

The model was developed to explain the boys public primary education gross enrollment ratios for 2003. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + X_2 \chi_2 + \beta_3 X_3 + \varepsilon$$

Where

Table 11

Regression Coefficients Model 4

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	5.440	20.993		.259	.796
Pupil/Teacher Ratios for 2000	-.051	.455	-.014	-.113	.911
% of the Population Living in Towns in '99	1.755	7.635	.030	.230	.819
% of the Population in Wage Employment in '99	50.228	13.055	-.526	3.847	.000

$\hat{Y}$ is the dependent variable, the boys public primary education gross enrollment ratios for 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2003

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 12. The model explained very little of the variance in the boys public primary education gross enrollment ratios for 2003 and was not significant [$R^2 = .027$, adjusted $R^2 = -.024$, $F(3, 58) = .527$, $p < .05$].

Regression Model 6

The model was developed to explain the girls public primary education gross enrollment ratios for 2003. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, the girls public primary education gross enrollment ratios for 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2003

Table 12

Regression Coefficients Model 5

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	4.567	2.699		1.692	.096
Pupil/Teacher Ratios for 2000	.016	.036	.076	.450	.654
% of the Population Living in Towns in '99	.843	.882	.144	.955	.343
% of the Population in Wage Employment in '99	-.409	1.765	-.043	-.232	.817

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999.

The results of the regression model are shown in Table 13. The model explained very little of the variance in the girls public primary education enrollment ratios for 2003 and was not significant [$R^2 = .077$, adjusted $R^2 = .030$, $F(3, 58) = 1.620$, $p < .05$].

Regression Model 7

The purpose of the model was to explain the boys public primary education completion rates for the class of 2003. The model was of the form:

$$\hat{Y} = X_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, the boys public primary education completion rates for the class of 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2003

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 14. The model explained about 15% of the variance in the boys public primary education completion rates for the

Table 13

Regression Coefficients Model 6

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	4.734	2.612		1.812	.075
Pupil/Teacher Ratios for 2000	.029	.035	.136	.831	.409
% of the Population Living in Towns in '99	1.267	.854	.218	1.484	.143
% of the Population in Wage Employment in '99	-1.170	1.708	-.124	-.685	.496

Table 14

Regression Coefficients Model 7

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	49.907	22.731		2.196	.032
Pupil/Teacher Ratios for 2000	-.428	.307	-.220	-1.392	.169
% of the Population Living in Towns in '99	13.028	7.430	.247	1.753	.085
% of the Population in Wage Employment in '99	5.407	14.864	.063	.364	.717

class of 2003 and was significant [$R^2 = .145$, adjusted $R^2 = .101$, $F(3, 58) = 3.286$, $p < .05$].

Regression Model 8

The purpose of the model was to explain the girls public primary education completion rates for the class of 2003. The model was of the form:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + X_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

$\hat{Y}$ is the dependent variable, the girls public primary education completion rates for the class of 2003

β_0 is the intercept

X_1 is the independent variable, the public primary education pupil/teacher ratios for 2003

X_2 is the control variable, the percentage of the population living in towns in 1999 and

X_3 is the control variable, the percentage of the population in wage employment in 1999

The results of the regression model are shown in Table 15. The model explained about 35% of the variance in the girls public primary education completion rates for the class of 2003 and was significant [$R^2 = .347$, adjusted $R^2 = .313$, $F(3, 58) = 10.265$, $p < .05$].

Table 15

Regression Coefficients Model 8

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
(Constant)	44.016	22.238		1.979	.053
Pupil/Teacher Ratios for 2000	-.636	.301	-.292	-2.114	.039
% of the Population Living in Towns in '99	6.285	7.269	.107	.865	.391
% of the Population in Wage Employment in '99	31.227	14.542	.327	2.147	.036

Chapter 5: The Finding, the Implication, the Conclusion, the Suggestions

This chapter concludes the current investigation of whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty. In it, the finding of the study is reported, the implication of the finding on Kenya's national education policy making is evaluated, and the conclusion of the study is made. The chapter ends with suggestions for future research on the Kenyan national system of education.

The Finding

The finding of this study was that Kenya's national policies of education are not consistent with the principles of nation building and state sovereignty. The finding was based on the fact that the multiple regression models which were generated for this study suggested a lack of relationship between the strength of the Kenyan state and the expansion of public primary education. The models showed instead that, controlling for economic development, the only significant relationship between the strength of the Kenyan state and the expansion of public primary education was the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable. The finding was not unexpected given the conclusion in mass schooling research that state strength is not associated with mass schooling (Ramirez & Meyer, 1980).

The Implication

The finding that Kenya's national policies of education are not consistent with the principles of nation building and state sovereignty implied that the policies constrain rather than expand education. If this indeed is the case, then the Kenyan national system

of education cannot be said to be serving the nation building purpose that national systems of education are purposed to serve. In other words, instead of build an integrated progress-oriented Kenyan nation by creating future individual adults who, in heart and mind, are loyal, first and foremost, to the Kenyan state, the Kenyan national system of education could be emphasizing tradition, and therefore, contributing to the underdevelopment of Kenya by empowering special interest groups that serve as alternative centers of power to the Kenyan state. Thus, the system may be failing to serve its ultimate mission which is to create a sovereign Kenyan state that could compete for economic, technological and military superiority.

Based on the finding of this study, therefore, changes in the Kenya national policies of education are necessary if the Kenyan national system of education is to build a Kenyan nation that is an aggregate of individuals. In order to determine the needed changes, the results of this study were evaluated based on five proposed guidelines for making national policies of education that are consistent with the principles of nation building and state sovereignty. The evaluation suggested that the Kenyan national policies of education were not consistent with the principles of nation building and state sovereignty because they were in violation of three of the guidelines. The five guidelines are (a) that national policies of education be informed by factors external to national polities, (b) that national policies of education assume state control of education, (c) that national policies of education assume decentralized organization of national systems of education, (d) that national policies of education assume a secular national system of education, and (e) that national policies of education assume national systems of

education to be decentralized units of a world institution that is purposed to create individual members of an integrated world polity.

Factors External to National Polities

The fact that the only significant relationships in this study were the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable and the strong positive relationship between the percentage of the population in wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable suggested that Kenya's national policies of education are explained by national conditions rather than by factors external to national polities that are identified in mass schooling research as the principles of nation building and state sovereignty (Benavot, Cha, Kamens, Meyer & Wong, 1991; Boli, Ramirez & Meyer, 1985; Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992; Ramirez & Boli, 1987). One of the conditions was the fiscal power of the Kenyan state. The other was the demand for education by economic development.

The Fiscal Power of the Kenyan State

Evidence that Kenya's national policies of education assume a relationship between the fiscal power of the Kenyan state and the expansion of public primary education is provided by the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable. The assumption suggested the influence of the supply of schooling theory on the making of the Kenyan national policies of education.

According to the theory, mass schooling is explained by the strength of the state as defined by its fiscal, legislative and political power. Empirically, however, the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable suggested that the influence of the theory constrained the Kenyan national system of education. The relationship was consistent with the finding in mass schooling research that state strength is negatively related to educational expansion (Ramirez & Meyer, 1980). In other words, the fact that the only significant relationship between the strength of the Kenyan state and the expansion of public primary education was the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable confirmed the argument in this study that, contrary to the supply of schooling theory, the Kenyan state, like other central states, does not have adequate resources to finance mass schooling.

Demand for Education by Economic Development

The strong positive relationship between the percentage of the population in wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable suggested the influence of the human capital theory on the making of the Kenyan national policies of education. According to the theory, education is an investment which yields "a future stream of returns or dividends to the initial investment" (Becker, 1964; Fuller & Rubinson, 1992; Langelett, 2002, p. 1; Shultz, 1961). Based on the theory, therefore, the positive relationship between *the* percentage of the population in wage employment in 1999 variable and the girls public primary

education completion rates for the class of 2003 variable implied that the persistence of girls in the class of 2003 until completion of their primary education cycle depended on family commitment to education. The commitment, in the human capital model of mass schooling, is demonstrated by the willingness of families to pay the costs of education and then wait for its benefits in the future. In mass schooling research, the costs of education are direct and indirect (Fishlow, 1966). The direct costs include the fees and other levies that are charged by schools as well as the costs, for example, of school supplies, meals and transportation. The indirect costs include the income from child labor that the families forego when they send their children to school. The benefit of education was, in the current study, wage employment.

To the supply of schooling theorists, however, the strong positive relationship between the percentage of the population in wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable would be evidence of the limitation that is imposed on educational expansion by national economic development when national policies of education do not assume adequate supply of schooling as defined by "the number and location of schools, classrooms, and teachers" (Walters, McCammon, & James, 1990, p. 2). Thus, in the supply of schooling model of educational expansion, schooling is not a function of family commitment to education as argued by the human capital theory and other theories of demand for education. Instead family decisions about education are limited by national economic, political and social conditions in which families find themselves. To the supply of schooling theorists, therefore, the strong positive relationship between the percentage of the population in

wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable was explained by the economic conditions in which Kenyan families found themselves. This argument is lent credence by the fact that wage employment is associated with urbanization. In other words, the more the districts were urbanized, the more schools were available in accessible locations and the more the girls in the class of 2003 were likely to persist in school until they completed their primary education cycle. Conversely, the more rural the districts were, the less public primary schools were available in accessible locations and the less the girls in the class of 2003 were likely to persist in school until they completed their primary education cycle.

The Principles of Nation Building and State Sovereignty

Unlike the current national policies of education which appear to limit the expansion of Kenya's public primary education based on the fiscal strength of the Kenyan state and the demand for education by national economic development, national policies of education which expand education could be made if the making of the policies was driven by commitment to the principles of nation building and state sovereignty The principles are identified in mass schooling research as the factors external to national polities which originated and expanded mass education in Western Europe in the late 18th Century and throughout the 19th Century and around the world in the 20th Century (Meyer, Ramirez, & Soysal, 1992;Ramirez & Boli, 1987). Commitment to the principles is also credited with "the world educational revolution" which occurred between 1950 and 1970 (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977, p. 242). According to the research, the principles foster mass schooling by limiting educational expansion (a) based

on the number of people who are educated relative to the size of the school age population that is yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992) and (b) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992). The principles are advanced by the world institution theory that mass schooling emerges and expands wherever the principles of nation building and state sovereignty are adhered to.

Control of Education

The negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable and the strong positive relationship between the percentage of the population in wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable also had implications on the control of public primary education in Kenya. Based on the relationships, the Kenyan national policies of education assume (a) state control of public primary education based on fiscal power and (b) control of education by families. The assumptions are, however, inconsistent with the assumption in mass schooling research that integrating national policies of education assume state control of education based on commitment to the principles of nation building and state sovereignty.

State Control of Education Based on Fiscal Power

The assumption by Kenya's national policies of education that the Kenyan state can, by its fiscal power, "surround and influence" and, therefore, control public primary education (Fuller, Hage, Garnier, & Sawicky, 1992, p. 931) was suggested by the negative relationship between the public primary education pupil/teacher ratios for 2003

variable and the girls public primary education completion rates for the class of 2003 variable. Fiscal power is implied in the relationship by the fact that the pupil/teacher ratios measure the "allocation of resources" for education (Hage & Garnier, 1992, p. 158). Consistent with mass schooling research finding that state strength is not related to mass schooling (Ramirez & Meyer, 1980), this negative relationship implied attempts by the Kenya government to control education based on its fiscal power. Indeed, the relationship captured the Kenya government policy of providing the Teachers Service Commission (TSC) employed teachers to all public primary schools in Kenya.

Family Control of Education

The assumption by the Kenyan national policies of education that education is controlled by families was suggested by the strong positive relationship between the percentage of the population in wage employment in 1999 variable and the girls public primary education completion rates for the class of 2003 variable. The assumption suggested the influence of the human capital theory that education is an investment which yields "a future stream of returns or dividends to the initial investment" (Becker, 1964; Fuller & Rubinson, 1992; Langelett, 2002, p. 1; Shultz, 1961). As a result of the assumption, therefore, whether or not girls in the class of 2003 completed their primary education cycle depended on family calculations of the costs and benefits of their education. In mass schooling research, the costs of education include direct costs and indirect costs (Fishlow, 1966). The direct costs include the fees that are paid to the schools such as tuition, facilities and school supply fees. Other direct costs include transportation, school uniform and meal costs. The indirect cost of education is defined as

the child labor wages that families forego when they send their children to school (Fishlow, 1966). In this study, the benefit of education was the wage employment which determined whether girls in the class of 2003 were allowed to persist in school until they completed their primary education cycle.

State Control of Education Based on Commitment to the Principles of Nation Building and State Sovereignty

The fact that Kenya's national policies of education assume state control of education based on fiscal strength and control of education by families also explained the lack of relationship that was found between the strength of the Kenyan state and the expansion of public primary education. As the European nationalists who championed the establishment of European national systems of education in the late 18th Century and throughout the 19th Century and the supply of schooling theorists would argue, national systems of education expand schooling to the masses if they are controlled by states. However, unlike the supply of schooling theorists, the nationalists would also argue that state control of education is a function of commitment to the principles of nation building and state sovereignty. Commitment by the Kenyan state to the principles of nation building and state sovereignty is thus necessary if the Kenyan state is to control public primary education. The commitment would foster state control of education by limiting educational expansion (a) based on the number of people who are educated relative to the size of the school age population that is yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992), and (b) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992).

The Organization of the Kenyan National System of Education

The result of this study that had implications on the organization of the Kenyan national system of education was the negative relationship between the public primary education pupil/teacher ratios for 2003 variable and the girls public primary education completion rates for the class of 2003 variable. The result implied that centralized organization of the Kenyan national system of education constrained, rather than expand, public primary education. The result also implied that the creation of a sovereign Kenyan state by building an integrated progress-oriented Kenyan nation is not the compelling interest of the Kenya government in education. If it was, the organization of the Kenya national system of education would be decentralized. The public primary education pupil/teacher ratios for 2003 variable suggested centralized organization of education because the recruitment, staffing and discipline of public primary school teachers in Kenya are centralized functions of the Teachers Service Commission (TSC).

The negative relationship between centralized organization of education and the expansion of public primary education in Kenya replicates the finding in mass schooling research that, contrary to the supply of schooling theory, state strength as measured by the fiscal, legislative and political power of the state is not associated with mass schooling (Ramirez & Meyer, 1980; Soysal & Strang, 1989). Instead, mass schooling is associated with weak states as was the case: in France where rapid primary school enrollment growth occurred under a "fragile" French state between 1837 and 1881 (Fuller, Hage, Garnier, & Sawicky, 1992, p. 923); in Great Britain where the expansion of secondary education to the masses occurred between 1881 and 1975 when the intervention in education by the British state was "hesitant" (Hage & Garnier, 1990); and

in the United States where a 72 percent enrollment rate was reported in 1870 when only six states had passed compulsory attendance laws (Meyer, Tyack, Nagel, & Gordon, 1979; Soysal & Strang, 1989). This association between state weakness and mass schooling implied the important role that local management of education played in the expansion of education. Indeed, as it is apparent in Soysal and Strang (1989), national systems of education expand education if, in their organization, education is managed at the local level and the states played the role of ensuring that the management was consistent with the principles of nation building and state sovereignty.

By implication, therefore, another reason for the lack of relationship that was found in this study between the strength of the Kenyan state and the expansion of public primary education is that Kenya's national policies of education assume a centralized, rather than a decentralized, national system of education. As a result, policies of education which assume a decentralized system of education are needed. The policies are especially important given that, with only about 33% of the population of Kenya living in towns, Kenya is largely a rural agricultural country which could deny the central government the "deep organizational roots in the population" that are needed to control mass schooling (see Soysal & Strang, 1989, p. 286). The making of the policies would, however, be subject to commitment by the Kenyan state to the principles of nation building and state sovereignty which would limit the compelling interest of the government in primary education to that of building an integrated progress-oriented Kenyan nation. Such policies would assume management of education at the local level and a central government role of ensuring that the management complied with the principles of nation building and state sovereignty. The local management of education

would comply with the principles if educational expansion was limited (a) based on the number of people who are educated relative to the size of the school age population that is yet to be educated (Meyer, Ramirez, Rubinson, & Boli-Bennett, 1977; Meyer, Ramirez, & Soysal, 1992) and (b) based on the number of school age children who are yet to be educated (Meyer, Ramirez, & Soysal, 1992).

Religion in Kenya's Public Schools

Whether the Kenyan national policies of education are secular could not be evaluated in this study because the relationship between religion and the expansion of public primary education was not controlled for.

The Kenyan National System of Education as a Unit of a World Institution that is Purposed to Create Individual Members of an Integrated World Polity

Whether Kenya's national policies of education assume the Kenyan national system of education to be a decentralized unit of a world institution that is purposed to create individual members of a world polity could also not be evaluated based on the data that were analyzed in this study.

Conclusion

This study was an investigation of whether Kenya's national policies of education were consistent with the principles of nation building and state sovereignty. If they were, they would expand education to the masses and, therefore, build an integrated progress-oriented Kenyan nation by creating future individual adults who were loyal, first and foremost, to the Kenyan state. The result would be a sovereign Kenyan state which could compete for economic, technological and military superiority. If, however, the policies were not consistent with the principles of nation building and state sovereignty, they

would constrain education based on the strength of the Kenyan state and the national economic, political and social demand for education. The result would be an underdeveloped, stratified Kenyan society which emphasized tradition rather than progress.

Based on the variables of the strength of the Kenyan state, the variables of Kenya's economic development, and the variables of public primary educational expansion that were analyzed, this study found that Kenya's national policies of education were not consistent with the principles of nation building and state sovereignty. The finding suggested that the Kenyan national system of education constrains, rather than expand education. As a result, rather than build an integrated progress-oriented Kenyan nation that is an aggregate of individuals, the system could be emphasizing tradition by empowering special economic, political and social interest groups that could deny the Kenyan state the sovereign power that it needs to compete for economic, technological and military superiority.

Thus, changes are needed in the making of Kenya's national policies of education if the Kenyan national system of education is to expand education and, therefore, serve its nation building purpose. Based on this study, the recommended changes concern three of the five proposed guidelines for making national policies of education:

1. The making of Kenya's national policies of education should be informed by factors external to Kenya that are identified in mass schooling research as the principles of nation building and state sovereignty. Currently, the results of this study suggested that the policies are designed to serve the economic, political and social interests of the Kenyan masses.

2. Kenya's national policies of education should assume state control of education. Based on the results of this study, the current policies of education appear to be consistent with the human capital theory that education is controlled at the individual level of society.
3. Kenya's national policies of education should assume a decentralized system of education. Currently, the policies assume centralized organization of the Kenya national system of education.

Suggestions for Future Studies

In this study, whether Kenya's national policies of education are consistent with the principles of nation building and state sovereignty was investigated. The study found that they are not. However, given the many factors of state strength, economic, development, political development, social development, and educational expansion that are suggested in mass schooling research studies, more studies are needed if the role that the Kenya national system of education plays in Kenya is to be fully understood. Like this study, the studies would be important because based on them, integrating national policies of education would be recommended.

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