

The **KENYA INSTITUTE** for **PUBLIC**
POLICY RESEARCH and **ANALYSIS**

Characterization of Potential Labour Market Entrants by Educational Attainment in Kenya

Naomi N. Momanyi and Joseph K. Ndung'u

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PROGRAMME

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Naomi N. Momanyi and Joseph K. Ndung'u

Kenya Institute for Public Policy
Research and Analysis

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Abstract

This study sought to investigate who is getting into the labour market in terms of education attainment and their size in the next five years in Kenya. Time series secondary data for the period between 2000 and 2016, from the Ministry of Education, Commission for University Education, and Kenya National Bureau of Statistics and other government documents, were utilized to get the numbers on the potential labour market entrants in Kenya. The study then employs Average Performance Rates to simulate the future. The study finds that the Kenyan market was largely characterized by unskilled labour, as approximately 60 per cent of those who went through the schooling system between 2000 and 2016 had less than or equal primary school as highest level of education attainment. A further 31.9 per cent had only Form IV certificates with approximately 2.6 per cent and 5.1 per cent being university and middle level colleges' graduates. It is projected that primary and secondary school level graduates will increase by 53.9 per cent and 64.3 per cent, respectively in the period 2018 and 2022 compared to those in 2013 – 2017. Without any additional investment in infrastructure, especially classrooms, it means that the size of secondary school classes will increase from 274 in 2016 to 357 in 2018.

Policy wise, with the Kenyan population being largely characterized by less than and up to primary school-level of education, there is need to institute a mechanism for complete and seamless transition of pupils from one grade to the next and from primary school level to secondary school. The government's efforts on driving up enrolment should also be aimed at retention of pupils in the schooling system. Further, capacity building past secondary school is crucial, and therefore the government should aim towards 100 per cent placement of KCSE students annually in a push to improve skill pool in the labour market. Investment in TVET by both the county and national governments should therefore be scaled up in terms of infrastructure because TVETs will play a crucial role in reviving the manufacturing sector in a bid to contribute to 15 per cent of GDP. Continuous reviewing and updating of TVET curricula is also vital to ensure relevant up-to-date practical skills to increase chances of employability of the youth while increasing performance efficiency in roles assigned and duties allocated.

Abbreviations and Acronyms

AfDB	African Development Bank
APBET	Alternative Provision of Basic Education and Training
ASAL	Arid and Semi-Arid Lands
EFA	Education for All
FDSE	Free Day Secondary Education
FPE	Free Primary Education
GER	Gross Enrolment Rates
HELB	Higher Education Loans Board
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KNBS	Kenya National Bureau of Statistics
MoE	Ministry of Education
NCPD	National Council for Population and Development
NER	Net Enrolment Rate
NFE	Non-Formal Education
STEM	Science, Technology, Engineering and Mathematics
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education and Training Authority

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1. Introduction

The Kenya Vision 2030, under the social pillar on Education and Training, promises to provide globally competitive, quality and relevant education and training. This is essential in acquiring the knowledge and skills required in the labour market. According to Kenya Country Report of 2014, over one million young people enter the labour market annually without the necessary skills with some having dropped out of school or completed school and not enrolled in any college. The 2015/16 Kenya Integrated Household Survey finds that 51.4 per cent of the total population had primary level of education as the highest attained while 21.2 per cent had secondary level of education. Only 3.0 per cent had attained university level of education (undergraduate and postgraduate). This pointing to the possibility that school dropout may be high at primary school level. Further, the Higher Education Loans Board - HELB (2015) notes that the unemployment rate in Kenya for university graduates is over 40 per cent whereas technical course graduates have an employability rate of up to 96 per cent. Notably, there has been significant growth in the number of Technical and Vocational Education and Training (TVET) institutions and subsequently TVET enrolments over the years.

Workforce Connections (2014) note that continued growth in youth population places a strain on the educational system, which struggles to ensure access, quality, and labour market responsiveness. Over time, the government has implemented various interventions to enhance school enrolment and retention rates. For example, the government introduced Free Primary Education (FPE) and Free Day Secondary Education (FDSE) in 2003 and 2008, respectively to increase access and thereafter keep school-age going pupils in the formal schooling system thus driving down the drop out levels and raising the retention rate. Under Free Day Secondary Education (FDSE) a capitation grant of Ksh 10,265 per student per annum was allocated, covering tuition and general-purpose expenses. Parents cater for boarding expenses, lunches, uniform and other development expenses (Ministry of Education, 2015).

Other initiatives include the Kenya Education Sector Support Programme (KESSP) that operationalizes the Sessional Paper No. 1 of 2005; provision for mid-day meals to school children in arid and semi-arid lands (ASALs), and development of gender in education policy to address the issues of gender disparities. Further, in 2009, the government developed a policy framework for Alternative Provision of Basic Education and Training (APBET) which has supported provision of basic education in the ASALs, the informal settlements in urban areas and poverty-stricken regions of the country.

With the growing population, Kenya labour force has expanded. However, to reap the demographic dividends, it is important that the new entrants into the labour market, specifically the youth, are able to find jobs. Currently, the youth (15-34 years) constitutes more than 60 per cent of the population, and therefore harnessing the energy and strength of the youth workforce has tremendous potential to make them the present and future drivers of inclusive and sustainable development in Kenya. Thus, the government, private sector and non-governmental organizations have put in place several development initiatives to address the unemployment issue by offering trainings, affirmative actions and internships to enhance the youth work experience hence employability. Despite these initiatives, unemployment among the youth remains a major challenge that requires policy attention.

The level of unemployment in Kenya was estimated at 7.4 per cent in the 2015/16 Kenya Integrated Household Budget Survey (KIHBS). This mainly considered the proportion of the working age population willing and available to work but have not accessed employment opportunities. Kaane (2014) notes that a key factor attributed to unemployment is lack of requisite knowledge and skills which drives a wedge between demand and supply in the labour market. Further, Mutinta (2016) observes that governments around the world are concerned about young people who are neither in school nor in any form of training as they cannot develop key skills for meaningful employment. This means that the education system has a key role to play in improving employability of the talents released into the labour market. For policy makers therefore, understanding the size and skills available in the labour market would go a long way in determining the best policy initiatives that would ensure a majority of the working population is engaged productively.

This study attempts to answer two fundamental questions: first, who is getting into the labour market and finally, what would this number be like in the next five years. It captures the period 2000-2016 which allows interrogating the labour market in two population census periods (1999 and 2009). The policy recommendations derived from this evidence-based research advice on the improvements required in building necessary skills for the market.

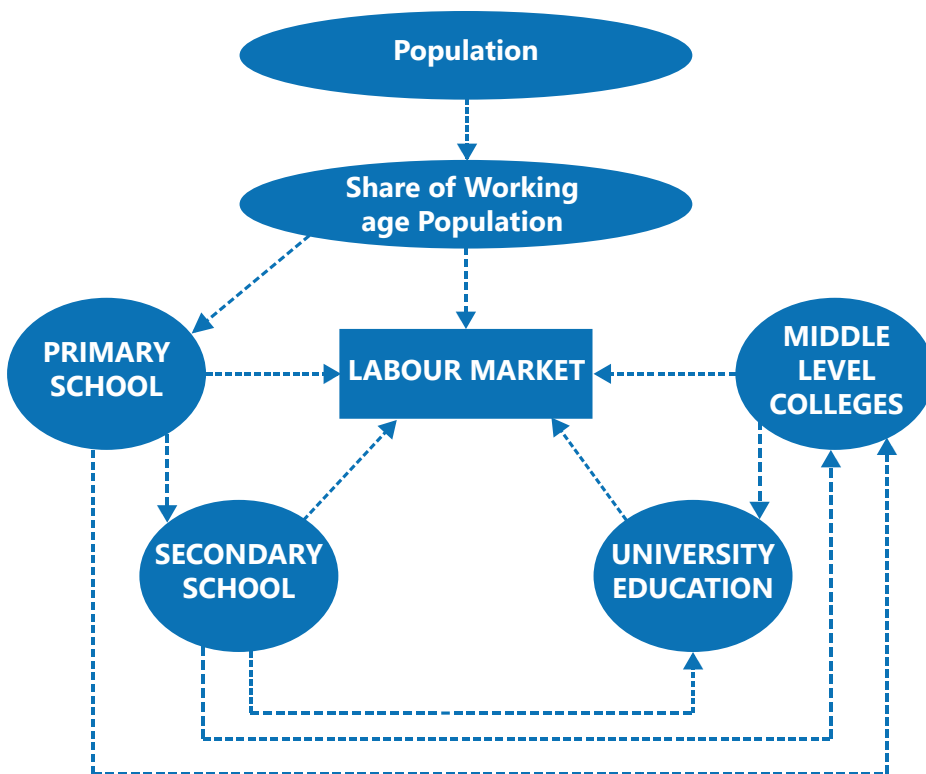
2. Conceptual Framework

To understand the potential composition of entrants into the labour market, the study treated all those who were of working age as potential suppliers of labour. Labour supplied in the market can be skilled, semi-skilled or unskilled depending on the level of education attained. Regardless of socio-economic predisposition, universal primary education was introduced to ensure a level ground for all to access formal education, hence offering an equal chance for access to skills. Those who do not join secondary schools enter the labour market or engage in low productivity activities as unskilled workers. A few join universities while others join middle level colleges (Wambugu, Munga and Onsomu, 2009).

In this study, the labour market was desegregated according to the education channels. The youth undergo several transitions during the ages of 12-24 years where some move from primary to secondary school whereas others leave school and start to work (Garcia and Fares, 2008). In light of this, there are people who access the labour market without any formal training. There are those who are privileged to enrol in primary school but drop out due to various reasons, and those that complete their primary school education are either enrolled into secondary education or incorporated into the labour market. But, regardless of the chance to attend secondary school, some still drop out. Those remaining complete their KCSE and become part of the work force or go ahead to further their studies. The framework in Figure 2.1 shows the linkages of these different groups of people to the labour market.

The study used secondary data from the Ministry of Education, Commission for University Education, and the Kenya National Bureau of Statistics and other government documents to analyze labour force in Kenya covering the period 2000-2016. Reports such as household surveys, economic surveys, education reports, population censuses or any other literature from administrative systems such as social security records, tax records, and public-sector payrolls were reviewed to get the data on the potential labour market entrants in Kenya.

Figure 2.1: Conceptual framework

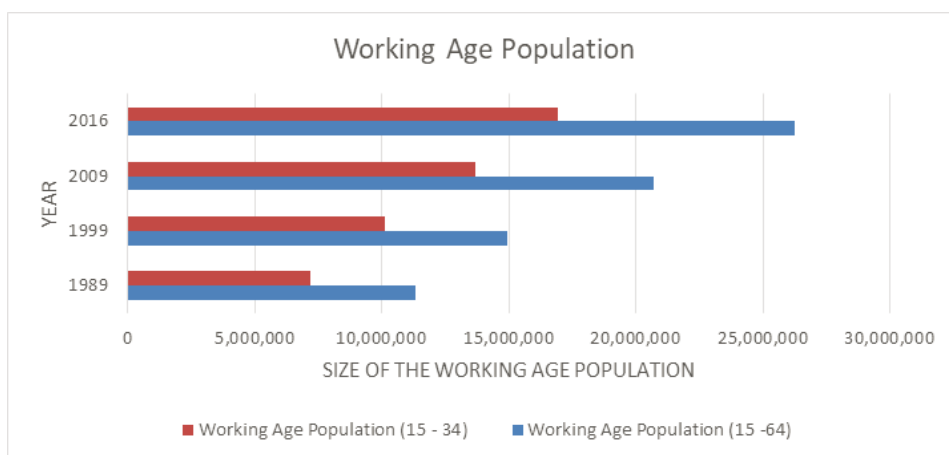


Source: Author's composition

3. Population and Education Structures in Kenya

Population dynamics are better understood in terms of size of the population over the years, proportion of the working age population and for the youth. In this regard, the total population increased from approximately 23 million during the 1989 population census to approximately 28 million in 1999 and approximately 37 million in 2009. This saw the economically active population (15-64 years) increase to 15.0 million in 1999 from 11.3 million in 1989 and rising to 20.7 million in 2009 as indicated in Figure 3.1. The National Council for Population and Development (NCPD) further projected the working age population to have increase to 26.3 million persons by 2016. Thus, the ratio of total working age to the entire population increased from 48.9 per cent to 53.1 per cent and 54.1 per cent in across the 1989, 1999 and 2009 censuses stood at respectively. The youth aged 15–34 years were the majority at 63.6 per cent in 1989, 68.0 per cent in 1999 and 66.1 per cent in 2009. With the school going population (pre-primary, primary, and secondary education) ranging from the age 4 to 17 years, it means that there has been an increase in the school age population from about 9.4 million in 1999 to 12.0 million in 2009, this excluding pre-primary population (KNBS, 2010). The Ministry of Education (2013) estimated the school age population has further increased to 16.0 million in 2013 and was expected to rise to 17.8 million in 2016.

Figure 3.1: Population composition in Kenya for 1989, 1999, 2009 censuses



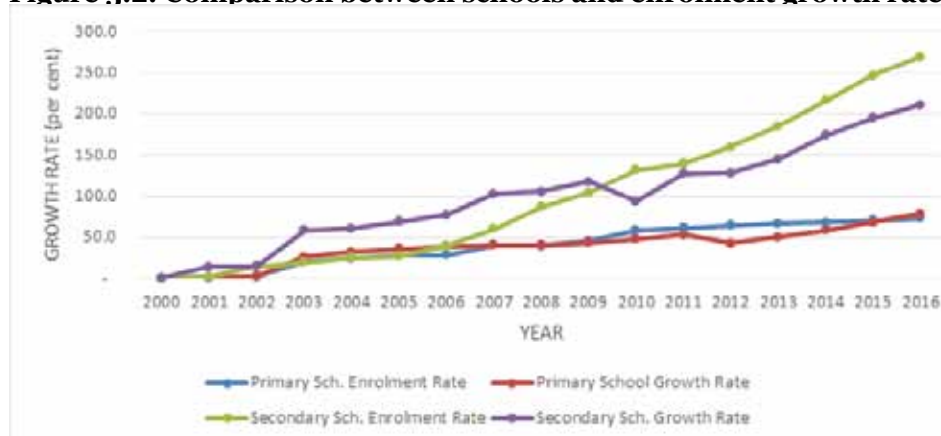
Source: KNBS data

Students are expected to enrol in formal education system at the age of 6 years and are required to sit for Kenya Certificate of Primary Education (KCPE) and Kenya Certificate of Secondary Education (KCSE) exams at the end of primary and secondary education cycles, respectively. These exams are prerequisite for the next level of education. The government is currently implementing a new

structure of learning consisting of 2 years of pre-primary education, 6 years of primary education, 6 years of secondary education (3 years in junior and 3 years in senior), and 3 years of higher education. The new structure recognizes the pre-school cycle as part of the education structure and with less emphasis on examination-based certification at the end of each education cycle. This follows the World Education Forum held in Dakar in 2000 where countries committed to achieving six (6) goals they had identified by 2015 in the journey towards achieving Education for All (EFA) (UNESCO, 2000). Countries were tasked to ensure that all children have access to free and compulsory primary education by 2015. Kenya therefore adopted an expanded view to include early childhood education, and secondary education in the Millennium Development Goal 2 (MDG 2) (Ministry of Education, 2014). These, together with continued education reforms made the number of children enrolled in both primary and secondary education grow over time.

To improve the quality of education at both primary and secondary school levels, there were enhanced efforts by the government, the African Development Bank and the local communities' in 2000's to support infrastructure development. This saw more funds injected into primary school infrastructure by the Ministry of Education, Constituency Development Fund, Local Authority Transfer Fund and community contributions (KNBS, 2010). The increased development expenditure led to opening of new schools and general expansion of existing schools and creation of additional national schools under Free Day Secondary Education (FDSE) to allow more students transit to secondary schools. Further, the policy framework for Alternative Provision of Basic Education and Training (APBET) was developed in 2009 to provide guidelines for the registration of the APBET institutions which have been instrumental in providing basic education to people in the ASALs, the informal settlements in urban areas, and poverty-stricken regions of the country.

With these investments, the period 2000–2016 saw the number of primary schools grow from 18,617 in 2000 to 33,202 in 2016 while the number of secondary schools more than tripled from 3,207 in 2000 to 9,942 in 2016 (Ministry of Education, 2005d, 2008b and 2014, KNBS, 2003 and 2017). Private primary schools registered higher growth compared to public schools, resulting in the proportion of public primary schools declining from 93.4 per cent in 2000 to 69.1 per cent in 2016. In terms of school size, the average size of a primary school declined from approximately 318 students in 2000 to 310 in 2016 while that of secondary schools increased from 230 to 274 students in the same period. This reflects the rise in the number of private primary schools and enhanced affordability of secondary education which saw increased enrolment without equal expansion in infrastructure.

Figure 3.2: Comparison between schools and enrolment growth rate

Source: KNBS Data

At tertiary level the number of TVET institutions grew from 42 in 2000 to 1300 in 2016 as university institutions increased from 17 in 2001 to 58 in 2016. An upward trend from 2012 can be attributed partly to investment by the government and private sector, and the policy on revamping TVET institutions (UNESCO, 2015). Within the TVET system, counties are responsible for youth polytechnics (open to youth from a variety of educational levels) and the network of Youth Empowerment Centres now under development, while other institutions remain under the responsibility of the national government. The national plan is to have a technical institution in every constituency across all counties in the country.

Table 3.1: TVET institution breakdown

Category	2012	2013	2014	2015	2016
Youth Polytechnics	647	701	701	816	816
Technical and Vocational Colleges	49	49	51	55	29
Kenya Technical Training College	1	1	1	1	62
National Polytechnics	2	2	2	2	11
Polytechnic University College	2	-	-	-	-
Private Technical and Vocational College	-	-	-	-	382
Total	701	753	755	874	1300

Source: Commission for University Education

With the Kenyan public universities accounting for the larger portion of university enrolments, significant growth was observed in the number of institutions, with university seven (7) colleges being granted charter to full university status in 2016 (KNBS, Various Issue).

Table 3.2: Breakdown of Kenyan universities

Year	Universities		
	Public	Private	Total
2001	6	11	17
2002	6	13	19
2003	6	17	23
2004	7	17	24
2005	7	17	24
2006	7	17	24
2007	7	21	28
2008	7	21	28
2009	7	24	31
2010	7	25	32
2011	7	27	34
2012	8	27	35
2013	22	30	52
2014	22	31	53
2015	23	30	53
2016	30	28	58

Source: KNBS Data

4. Cohort Survival Rate

4.1 Primary School Level

Ideally, it is expected that students who enrol in Class One survive through to sit for their final year exam in primary school. For example, out of the 1,024,200 pupils (519,100 male and 505,100 female) enrolled in standard one (1) in 2000 only 69 per cent or 704,800 (372,100 (71.7%) male and 332,700 (65.9%) female) enrolled in class eight in 2007. Similarly, out of 1,311,700 pupils (679,000 males and 632,700 females) who enrolled in Class One in 2003, only 741,500 pupils (386,800 males 354,700 females) enrolled in Class Eight in 2010 (Table 4.1). The differences are indicative of the drop-out level at primary school level.

enrolled in year	class 1		class 2		class 3		class 4		class 5		class 6		class 7		class 8	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
2000	519.1	505.1	482.3	447.7	437.6	391.1	415.9	420.3	358.9	398.9	329.6	347.5	300.4	334.7	243.0	232.6
2001	482.1	456.6	447.7	428.9	423.6	404.8	362.3	390.5	366.5	364.5	327.5	328.5	307.3	321.1	235.1	241.4
2002	488.8	489.4	434.5	416.1	415.0	397.4	408.9	400.2	369.3	371.8	338.8	352.3	328.3	336.2	280.3	244.5
2003	679.0	632.7	526.4	492.0	490.8	454.4	475.7	446.9	436.0	419.8	409.6	392.3	383.2	378.9	282.4	269.1
2004	646.2	636.2	528.3	551.1	493.9	459.9	477.7	445.7	444.0	402.5	418.8	399.9	412.8	404.9	334.0	309.1
2005	620.4	565.5	525.3	531.6	548.2	517.5	493.7	499.9	448.1	410.8	429.3	413.6	443.0	430.0	342.1	309.6
2006	593.2	568.1	529.2	528.1	535.1	534.8	542.5	519.7	531.6	508.7	430.9	417.9	453.0	442.0	336.5	302.3
2007	667.9	644.2	622.4	593.9	603.7	594.6	592.3	541.0	519.0	480.2	454.0	444.4	420.9	410.1	372.1	332.7
2008	663.9	652.2	632.7	595.8	596.4	584.2	591.4	580.0	543.0	539.0	510.1	469.4	459.2	445.7	366.8	335.1
2009	670.9	655.7	651.8	638.1	624.8	598.2	586.4	563.3	577.4	558.6	529.6	511.5	497.5	456.6	377.1	350.0
2010	736.7	731.6	679.9	636.1	643.3	607.5	633.0	608.8	582.8	584.8	558.0	562.1	531.3	523.4	386.8	354.7
2011	713.9	656.8	629.4	631.8	627.6	646.5	626.0	637.4	603.0	579.3	525.5	560.9	510.2	512.9	451.6	429.3
2012	712.2	658.1	627.8	654.9	626.0	646.6	624.2	643.3	648.5	625.7	588.0	567.5	547.2	553.9	448.8	433.0
2013	710.5	659.1	626.2	639.8	626.1	652.0	622.8	645.3	644.8	631.5	631.4	613.0	580.0	580.3	448.1	426.8
2014	712.1	670.4	629.9	644.9	624.5	637.7	627.9	651.7	640.5	628.2	621.4	618.5	585.2	601.0	448.0	446.1
2015	702.0	659.4	622.7	648.3	625.9	641.9	633.9	637.3	637.4	641.1	638.7	633.9	615.6	619.7	420.7	461.3
2016	695.6	654.9	626.3	650	626.3	650	620.6	628.7	626.9	650.5	627.9	650	645.7	650.4	485.2	427.2

Source: Author's tabulation

Over time, the drop-out rate for those enrolled in Class 8 has been fluctuating over the years but dropped from 31.2 per cent in 2007 to 27.4 per cent in 2016. The female pupils registered average drop-out rate of 29.6 per cent compared to 28.9 per cent registered by male pupils (Table 4.2).

Table 4.2: Percentage drop-out rates in Kenyan Primary Schools between Class 1 and 8

	Dropout rate			
	Class 1	Class 8	Male	Female
2000/2007	100.0	(31.19)	(28.32)	(34.13)
2001/2008	100.0	(25.24)	(23.92)	(26.64)
2002/2009	100.0	(24.12)	(22.85)	(25.44)
2003/2010	100.0	(43.47)	(43.03)	(43.94)
2004/2011	100.0	(29.76)	(30.11)	(29.38)
2005/2012	100.0	(26.81)	(27.50)	(26.08)
2006/2013	100.0	(23.80)	(24.46)	(23.11)
2007/2014	100.0	(31.86)	(32.92)	(30.75)
2008/2015	100.0	(29.18)	(29.10)	(29.27)
2009/2016	100.0	(27.38)	(27.53)	(27.22)
Average	100.0	(29.28)	(28.97)	(29.60)

Source: Author's tabulation

At various class levels, the average retentions/ survival rates from one class to the other range between an average of 76.8 per cent and 98 per cent. There are significant dropout rates as pupils transit from Class 7 to 8, with only 76.8 per cent being retained in the schooling system. This is then followed by pupils moving from Class 4 to 5 and Class 1 to 2 (Table 4.3).

Table 4.3: Retention rates in Kenyan primary schools

Enrolled in year	Retention rates							
	class 1	class 2	class 3	class 4	class 5	class 6	class 7	class 8
2000/2007	100.0	90.85	89.06	100.91	87.04	94.46	96.74	71.51
2001	100.0	93.09	94.78	94.54	93.34	90.44	95.05	79.01
2002	100.0	88.78	95.50	99.59	91.60	93.39	96.01	80.48
2003	100.0	77.64	92.81	97.61	92.65	92.79	96.08	72.37
2004	100.0	90.98	83.70	96.82	91.67	96.72	99.85	78.67
2005	100.0	93.47	94.62	90.33	89.24	98.02	103.57	74.65
2006	100.0	93.85	97.46	97.96	86.38	94.43	105.46	71.04
2007	100.0	92.70	97.70	92.05	91.35	90.91	91.48	84.81
2008	100.0	93.34	96.10	99.22	92.37	90.53	92.28	77.65
2009	100.0	97.23	94.04	94.78	98.81	91.12	92.17	76.21
2010	100.0	90.98	93.62	99.28	94.02	95.93	94.16	70.30
2011	100.0	97.12	99.47	99.19	90.02	96.12	90.03	85.98

2012	100.0	97.26	99.39	99.46	96.56	90.91	95.21	80.17
2013	100.0	96.09	100.92	99.23	96.84	97.50	90.03	78.99
2014	100.0	95.83	99.05	101.33	95.42	97.73	96.72	74.56
2015	100.0	97.77	99.01	101.78	96.82	98.01	97.15	75.39
2016	100.0	98.95	100.04	101.83	96.78	99.25	99.13	74.33
Averages per class	93.29	95.72	98.00	92.99	94.60	95.95	76.83	

Table 4.4: Cohort survival rates in primary school

	Cohort survival rates							
2000/2007	100.0	85.33	92.95	113.56	91.75	99.57	106.18	78.75
2001/2008	100.0	90.61	111.11	97.69	93.12	98.70	97.91	84.46
2002/2009	100.0	106.28	93.65	101.04	93.28	101.07	99.50	80.44
2003/2010	100.0	86.86	93.62	97.54	96.03	98.03	97.41	77.72
2004/2011	100.0	90.02	94.22	102.97	98.92	95.67	101.89	83.41
2005/2012	100.0	90.36	109.03	98.58	96.98	98.60	91.34	86.29
2006/2013	100.0	104.74	97.06	97.38	101.56	97.33	96.89	80.37
2007/2014	100.0	93.63	98.74	102.37	95.21	97.82	96.87	79.88
2008/2015	100.0	98.01	96.97	105.00	96.86	97.81	96.37	73.79
2009/2016	100.0	100.71	99.11	99.50	96.87	97.15	99.71	77.93

Source: Author's tabulation

The introduction of FPE saw increased number of students enrolled in Class 1 in 2003. The increment totalled to 1,311,700 pupils (679,000 males and 632,700 females), compared to 958,200 pupils (488,800 males and 469,400 females) in 2002, the highest enrolment spike experienced over the study period. Furthermore, with increased enrolments across all the other classes, the cohort survival rates surpassed 100 per cent mark as highlighted in Table 4.4. The FPE programme abolished tuition fees and provided a capitation grant of Ksh 1,020 per child. As a result, this secured children who could have dropped out or never attended school.

Despite this initiative, between 2000-2016, those who never completed primary school (captured by dropping out of the schooling system as pupils transition from one class to another) totalled 3,495,500 considering only those who would have attained class 8 by 2016. Assuming no repetitions or natural attrition by death, it is assumed that all students enrolling in class one in 2000 would be in class 8 in 2007. The drop outs from one class to the next is the differential in enrolment in the subsequent class the following year with that of the previous year. In 2000, 519,100 male pupils and 505,100 female pupils enrolled in class one. However, in 2002, 447,700 male pupils and 426,300 female pupils enrolled in Class 2 resulting

in an approximately 71,400 male pupils 78,800 female pupils dropping out of the schooling system (Table 4.5).

The drop-outs in primary school could be attributed to natural attrition or students abandoning education to join the labour market and this situation is not unique to Kenya. According to the Uganda National Examinations Board (UNEB), statistics show that in just two decades between 1995 and 2015, about 12.2 million pupils started primary one but only 6.95 million (57.2%) completed their primary schooling cycles (Kamugisha, 2017). UNESCO (2012) also reported that school dropout rates in Africa were the highest in the world with 42 per cent dropping out before the end of primary education due to inefficiencies in the school systems. In spite of this shared attribute, the dropout levels should be a cause for policy concern.

Nearly all students enrolled in Class 8 register for the KCPE. For example, of a total of 12,301,300 students enrolled for Class 8 over the period 2000 to 2016, and only 1 per cent (120,400) of the students did not register for KCPE exams. This is an assurance that those who survive to enrol in Class 8 exit the primary school level with KCPE certificate.

From this study's findings, 38 per cent of KCPE candidates do not proceed to higher level of learning while 30 per cent from cohorts 2000 to 2007 through to cohort 2009 to 2016, who enrol in Class 1 do not make it to complete Class 8. Overall, it is estimated that approximately 60 per cent of the studied population has up to primary level of education. KIHBS (2018) further captured 51.4 per cent of the total Kenyan population as having primary level of education as the highest attained. This translates to more than half the Kenyan population majority of whom are of the working age as having primary level of education as the highest attained.

4.2 Secondary School Level

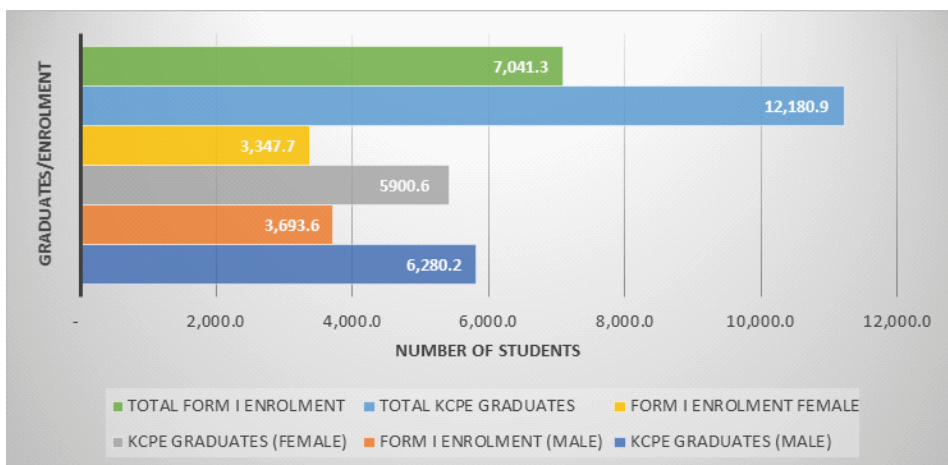
Students who sit for KCPE exams are expected to enrol in Form 1 in the next year of study. However, a good number of KCPE candidates do not transition to secondary school education. For example, between 2000 and 2016, the number of students who sat for KCPE exams stood at approximately 12,180,931 (6,280,274 male and 5,900,657 female) but only 62 per cent or 7,041,300 (3,693,600 male and 3,347,700 female) joined secondary school in the subsequent years while 6 per cent enrolled with youth polytechnics, according to data obtained from the various KNBS' economic surveys within the same period. This means that approximately 3.5 million students entered the labour market in 2016, with only primary education.

Table 4-5: Number of primary school dropouts between 2000-2007 and 2009-2016 cohorts

Enrolled in year	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total (Drop outs)
2000/07	519.1	505.1	-71.4	-78.8	-32.7	-28.9	60.7	49.5	-31.7	-44.4	-14.7	11.1	23.7	28.4	-80.9	-109.3			(319.4)
2001/08	482.1	456.8	-47.5	-40.7	56.2	38.3	-13.1	-8.7	-28.6	-34.9	-18.3	7.1	-9.9	-7.8	-54.1	-75			(237)
2002/09	488.8	469.4	37.6	22.6	-32.5	-32.2	-0.2	10.1	38.1	38.8	-67.8	-64.3	-5.8	1.3	-81.1	-95.7			(231.1)
2003/10	679	632.7	-90.7	-81.6	-39.1	-33.6	-6.7	2.2	-23.5	-39.5	-8.9	-10.8	-12.6	-12.8	-110.7	-101.9			(570.2)
2004/11	646.2	606.2	-70.4	-54.6	-20.7	-16.8	-2.3	6.2	-9.8	-2	-19.4	-27.5	7.7	11.9	-79.7	-95.3			(372.7)
2005/12	620.4	585.8	-27.2	-17.7	10.5	16.5	-12.3	-4.6	-14	-21.4	-19.4	3.5	-47.8	-49.2	-60.4	-79.9			(323.4)
2006/13	593.2	568.1	29.2	25.8	-26	-9.7	-10	-20.9	-3.6	21.5	-7.3	-23.9	-28.3	-7	-99.1	-117.1			(276.4)
2007/14	667.9	644.2	-35.2	-48.4	-7.9	-7.6	8.2	20.6	-30	-29.5	-14	-11.8	-29	-7.2	-112	-114.2			(418)
2008/15	663.9	652.2	-12.1	-14.1	-8.5	-30.6	32.7	29.9	-29.5	-11.7	-15.1	-12.7	-33.2	-12	-127.5	-139.7			(384.1)
2009/16	670.9	655.7	9	0.4	-2.3	-9.6	-3.4	-3.2	-29.4	-11.8	-23.4	-13	-4.8	1.2	-130.4	-142.5			(363.2)
			(279)	(287.1)	(103)	(114.2)	53.6	81.1	(162)	(134.9)	(208.3)	(142.3)	(140)	(53.2)	(935.9)	(1070.6)			(3495.5)

Source: Author's tabulation

Figure 4.1: Primary to secondary transition indicators between 2000 and 2016 ('000)



Source: KNBS data

The transition rate to secondary school from primary school has improved especially with the introduction of FDSE in 2008. It increased from 43.3 per cent in 2000 to 72 per cent in 2010, surpassing the set target of 70 per cent by 2010 while in 2015 and 2016, the primary school completion rate and secondary school transition rates were almost at par. Total enrolment in both public and private secondary schools more than tripled in the period 2000 to 2016, a testament of the government efforts to improve access to basic education in the country (KNBS, 2002 and 2017).

The retention rate in secondary school is higher than in primary school. For example, in 2016, the expectation was that all the 5,084,960 students (2,697,460 male and 2,387,490 female) enrolled in Form 1 in 2013 would enrol in Form 4. The dropout rate was 5.6 per cent with 4,799,300 students (2,595,910 male and 2,203,080 female) enrolled. Female constituted a higher (63%) dropout compared to the male students.

The dropout rates are seen to fluctuate over the study period, but significant increases in enrolment back to the schooling system are seen for the cohorts 2005-2008, and 2006-2009 represented by overall positive figures in dropout numbers. Very low dropout rates are also observed for the 2007-2010 cohort due to introduction of FDSE in 2008.

Kenya has made comparatively higher progress in its post-primary education in the last decade and half. The secondary school gross enrolment ratio (GER) grew from 34 per cent in 2000 up to 66.7 per cent in 2016. The government's emphasis

Table 4.6: Number of secondary school dropouts between 2000 and 2003 and 2013 and 2016 cohorts

	Form I		Form II		Form III		Form IV		Total Drop outs
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
2000/2003	110053	98706	-3328	-3117	-6302	-7307	1899	-3193	-21348
2001/2004	121992	113754	-16416	-15918	686	403	-4961	-8823	-45029
2002/2005	110965	99501	314	1999	6696	3618	-7066	-6751	-1190
2003/2006	142887	134935	-18302	-20882	-3673	-6283	10579	3845	-34716
2004/2007	146145	126557	-23278	-17086	-1889	5972	16771	-1608	-21118
2005/2008	139469	124384	-7454	-5307	25888	15688	3123	1510	33448
2006/2009	161588	137873	11856	11729	8331	6196	989	-1252	37849
2007/2010	170297	142672	26203	20492	-26219	-20585	-382	-580	-1071
2008/2011	207212	180461	-5167	-5363	14741	6725	-10234	-15322	-14620
2009/2012	232854	212467	-709	-668	-7508	-23391	-1505	-210	-33991
2010/2013	266707	232226	-26155	-12757	-1403	-1191	5314	-14074	-50266
2011/2014	276965	244636	-2770	-4893	-6974	-10874	-16985	-12406	-54902
2012/2015	282555	249573	5683	4166	6025	9932	-17172	-33369	-24735
2013/2016	327775	289753	-1386	17503	4758	-10890	-34165	-29790	-53970
			-60909	-30102	13157	-31987	-53795	-122023	-285659

Source: Author's tabulation

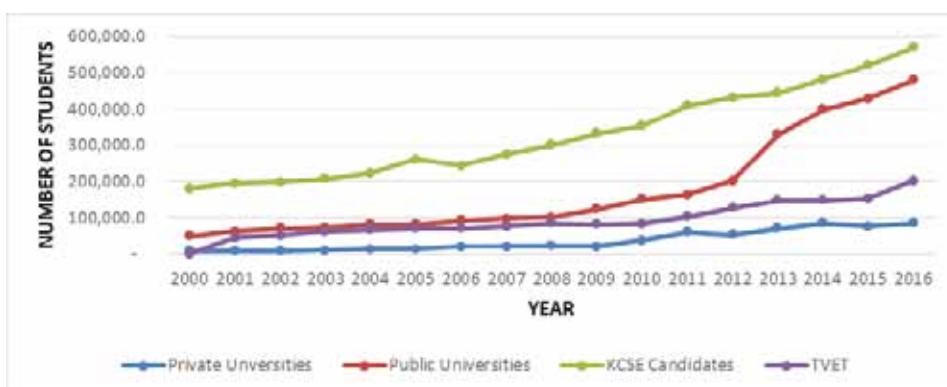
on free and compulsory basic education seems to create morale for primary school finalists to even enrol privately or informally to acquire the “O” level certificate. This is evidenced by students enrolled in Form 4, where the number who register to sit for the KCSE exam is higher than enrolled in secondary schools. For example, in 2000-2016, about 5,638,400 students (3,049,920 male and 2,588,470 female) registered for the KCSE exam compared to 5,339,300 students enrolled in Form 4. Therefore, it is estimated that 307,110 students (168,580 male and 138,520 female) informally registered for KCSE exam within the period under review, which is very encouraging given that only 62 per cent of those who finished primary school enrolled in Form 1.

From KIHBS, it is clear that 21.2 per cent of the population employed have secondary school education, which raises concern on transition to tertiary institutions because from cohorts 2000-2003 through to 2013-2016, 93.4 per cent of all students enrolled in Form 1 make it to Form 4.

4.3 Tertiary Education

Figure 4.2 compares the number of students sitting for secondary education against those who enrol in tertiary institutions. Enrolment in tertiary institutions is pegged on KCSE attainment where generally the cut-off grade for getting into university to pursue a degree in Kenya is a C(+) but the number of students who attain C(+) and above is significantly lower than that of those with a grade below C(+). In 2016, there was a drop in the number of students who attained the university admission grade due to the teachers strike coupled with the implementation of education reforms to curb cheating in the national examinations (KNBS, 2017).

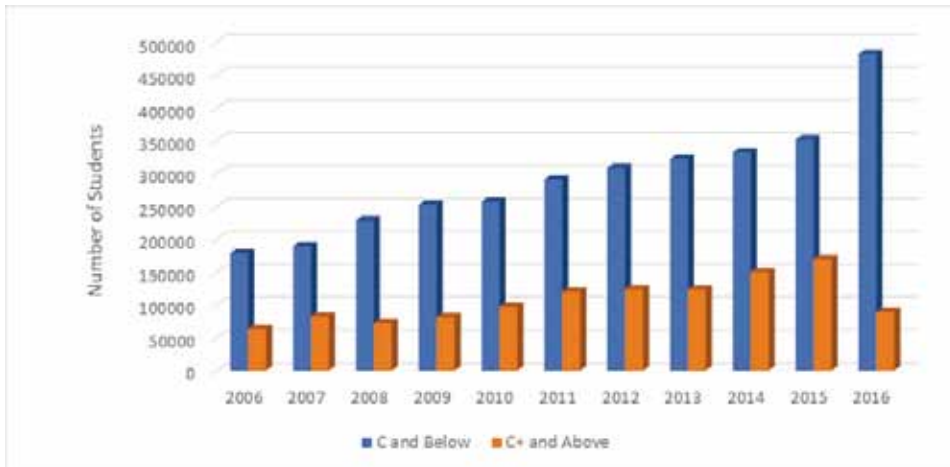
Figure 4.2: KCSE candidates compared to tertiary enrolments



Source: KNBS Statistical Abstract

Transition from secondary school to universities level has been low. In the 2002/03 academic year, only 7.1 per cent of Kenya Certificate of Secondary Education (KCSE) students were admitted to public and private universities locally, representing 26 per cent of the students who qualified (attained grade C plus and above). After the introduction of both the FPE and FDSE in 2010/11 which saw a significant growth in the number of students sitting for KCSE, only 23.3 per cent of those who qualified were admitted to local universities. This represents 7.7 per cent of the total KCSE candidates during the previous academic year and the situation has not changed markedly. Only 2 per cent of the pupils enrolled at primary Class 1 transitioned to first year in university in the period 2000-2016.

Figure 4.3: Candidates performance in the secondary school national examinations

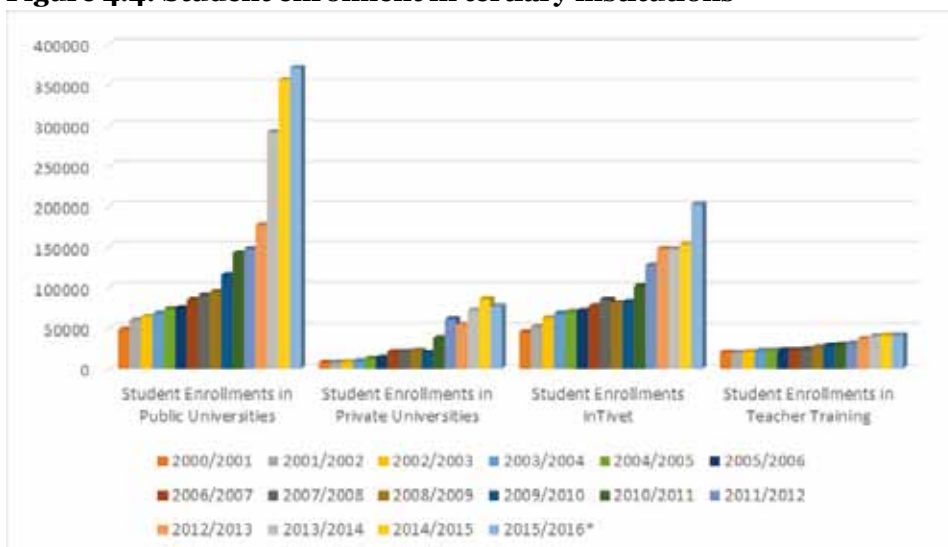


Source: Research Findings

Public universities account for the highest number of enrolment of university students. The enrolments increased drastically from the 2011/2012 academic year especially because the Joint Admissions Board in 2011 added two groups of candidates into university to avoid the two-year break for students after completing their secondary school education. Further growth is witnessed in 2014 to 2016 due to increase in the number of public universities, expansion of universities' infrastructure, establishment of more constituent colleges, introduction of new courses, financing of students in private universities by the government and opening of more satellite campuses. Introduction of private entry schemes in public universities also expanded enrolment while generating funds to supplement funds the universities receive from the exchequer.

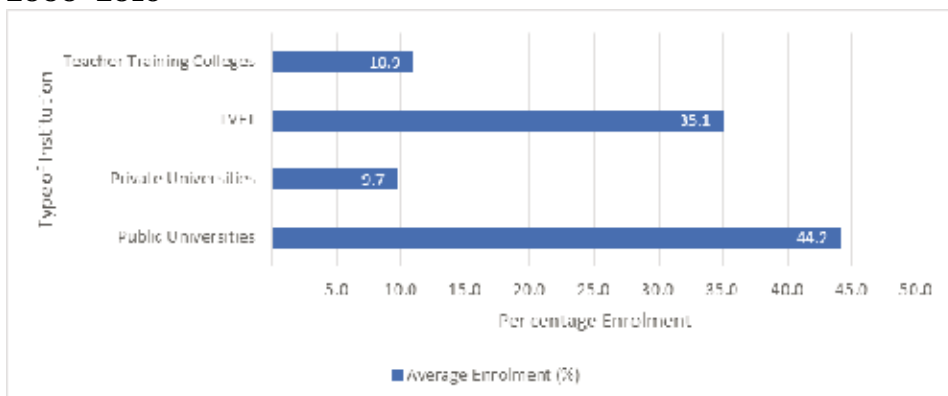
Students who are not admitted to universities are expected to join other middle level colleges for certificate and diploma courses. While the enrolment in universities has greatly improved, the TVET sector shows a modest share, although significant growth was witnessed in the period 2001 to 2016. Enrolment increased from 45,100 students (22,230 male and 22,840 female) in 2001 to 202,600 (113,960 male and 88,590 female) in 2016 (KNBS, various issues). Key among the factors influencing the enrolment to TVET institutions are upgrading of colleges to universities and the implementation of the TVET Act 2012.

Figure 4.4: Student enrolment in tertiary institutions



Source: Research findings

Figure 4.5: Average enrollment (%) in tertiary institutions between 2000- 2016



Source: Research Findings

Graduates in tertiary institutions of learning include those from universities, middle level colleges and polytechnics. However, due to natural attrition, academic leaves/breaks and retakes of courses, not all students who enrol graduate or even in the time span they are anticipated to graduate. In the period 2012 to 2015, Business and Administration courses are seen to produce most graduates followed by Bachelor of Education (Arts). The courses that have more female student's graduates than their male counterparts are education (Arts), teacher training courses, social and behavioural sciences, services courses, law and journalism and information. The STEM courses attract more male than female graduates and therefore a lot more needs to be done to attract female students to these courses in the form of mentorship or even preferential scholarships.

The graduation trends for both private and public universities as shown in Table 4.8 reveal that the gender gap is still present, with men registering higher graduation numbers for the Bachelors, Postgraduate diplomas, Masters and

Table 4.7: Trend in graduation by cluster

Cluster	Male	Female	Total
Agriculture, Forestry and Fisheries	3,604	2,173	5,777
Architecture	926	357	1,283
Business and administration	35,923	31,496	67,419
Computing	7,985	3,439	11,424
Education (Arts)	19,214	19,903	39,117
Education (Science)	5,580	3,177	8,757
Engineering	6,240	1,370	7,610
Environment	2,018	1,319	3,337
Health and Welfare	6,618	6,374	12,992
Humanities and Arts	9,379	8,567	17,946
Journalism and Information	2,259	3,120	5,379
Law	2,500	2,554	5,054
Life Science and Physical Science	4,993	3,100	8,093
Manufacturing	221	58	279
Mathematics and Statistics	2,425	1,361	3,786
Security and Conflict Resolution	1,463	684	2,147
Services	808	1,001	1,809
Social and Behavioral Science	3,426	4,163	7,589
Teacher Training	1,629	2,457	4,086
Veterinary	146	56	202
Other	1,671	1,572	3,243
Totals	119,028	98,301	217,329

Source: Commission for University Education

PhDs over the years. It is, however, encouraging to note the increase in female graduation numbers year on year. Notably, over the period 2012-2015, only a total of 217,329 graduated which is significantly lower than the intakes per year in the private and public university. This may imply that there are either dropouts or some students had to re-take studies in various academic years.

Table 4.8: Trend in graduation in public and private universities

Bachelors			Post Graduate Diploma			Masters			PhD		
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
17,412	14,311	31,723	336	244	580	2,415	1,932	4,347	134	63	197
21,537	18,628	40,165	507	304	811	2,949	2,340	5,289	167	102	269
28,986	23,783	52,769	1,282	853	2,135	4,022	3,248	7,270	268	159	427
32,995	27,866	60,861	858	568	1,426	4,865	3,726	8,591	295	174	469

Source: Commission for University Education

5. Assessing the Situation in the Next Five Years

After assessment of the population dynamics and education attainment in Kenya, it is important to assess the potential situation for the next five years so that relevant policies and regulations can be developed to ensure that majority of the population access education and increase their chances of gainful employment. Moreover, there is need to ensure that majority of the population do not merely progress up to primary or secondary school level of education as it is currently.

The study used average performance rates in the last 17 years to simulate expected trends in enrolment in both primary and secondary school education and the expected number of dropouts at all levels of the education cycle. The study assumed, *ceteris paribus*, that at a minimum, the current policy environment will not worsen and government may only intervene to improve its policies. Time series secondary data for the period between 2000–2016 from the Ministry of Education, National Council for Population and Development (NCPD), and Kenya National Bureau of Statistics and other government documents were used to derive the projected numbers on enrolments and dropouts for the period up to 2022.

In the next five years, assuming a population growth rate of 2.07 per cent, the population at age 6 years (ready for enrolment in Class One) will increase from 1,161,100 in 2016 to 1,180,700 in 2022. The primary school enrolments in Class One are expected to grow by 8.0 per cent, increasing from 1,352,600 in 2016 to 1,462,300 students by 2022. If the current average dropout rates at each class are maintained, it means 5,019,000 students will sit for end of primary level of education exam in the period 2018-2022, an increase in primary level graduates by 53.9 per cent in the period compared to those in 2013-2017.

With a 100 per cent transition rate from primary to secondary school with the FDSE, and no dropout in secondary school, this implies that between 2018-2022, 3,859,600 students will sit for KCSE. This means an increase in secondary school graduates by 64.3 per cent compared to the period 2013-2017. Without any additional investment in infrastructure, especially classrooms, it means that the size of secondary school classes will increase from 274 in 2016 to 357 in 2018.

Table 5.1: Projected number of enrolment for the period 2018-2022

Period	Total population	Children aged six years (NCPD projections)	Class one enrolment (projections from 2018, assuming actual for 2016 and 2017)	Class 8 enrolment (projections from 2018, assuming actual for 2016 and 2017)	Form 1 enrolment (using the previous column in projecting assuming 100 per cent transition)	Form 1 enrolment (using the previous column in projecting assuming average of the transition (79.6 per cent) for 2000-2016 period)	Form 4 enrolment assuming no drop-out	Form 4 enrolment assuming 5% average dropout in the 2000-2016
	(NCPD projections)							
2016	44,980.0	1,161.1	1,352.6	964.0	964.0	757.9	617.5	562.9
2017	45,928.0	1,164.5	1,370.3	994.0	994.0	801.5	673.4	578.9
2018	46,891.2	1,166.9	1,388.2	977.9	977.9	778.6	732.7	695.7
2019	47,869.7	1,168.8	1,406.4	990.7	990.7	788.8	757.9	719.7
2020	48,860.0	1,163.5	1,424.8	1,003.6	1,003.6	799.2	801.5	761.1
2021	49,862.6	1,160.0	1,443.4	1,016.8	1,016.8	809.6	778.6	739.4
2022	50,875.3	1,180.7	1,462.3	1,030.1	1,030.1	820.2	788.8	749.1

Assuming the current rate of growth of universities students, it is projected that to absorb those exiting secondary education in 2018-2022, a huge proportion of the students will be registered with the TVET, so that TVET gets over a 100 per cent growth in enrolment. Considering that some dropouts may decide to register with TVETs to gain more skills to participate in the labour market, then there is need to increase capacities and number of TVET institutions. Advancing of HELB loans to TVET students and centralizing placement at KUCCPS will enhance enrolment in tertiary institutions.

Should there be no further efforts directed towards achieving 100 per cent transition from primary to secondary school, the proportion of the population that will be having only or up to primary school level of education will continue to dominate in the population.

6. Conclusion and Recommendations

The study aimed to analyze the potential labour supply with entrants from the education system. This is in recognizing the objective set in the Kenya Vision 2030 to provide globally competitive, quality and relevant education and training to support in building skills required for the labour market, and recognizing that demographic dividend can only be realized if the youth population is absorbed productively into the labour market.

The findings of the study corroborate those of 2015/16 KIHBS that a significant proportion of the labour supply in Kenya has primary level education. Despite the efforts made to enhance retention rate in primary school with the FPE, dropout rate has not significantly changed. About 38 per cent of KCPE candidates do not proceed to higher level of learning while 30 per cent from cohorts 2000-2007 through to cohort 2009-2016 who enrol in Class 1 do not make it to complete Class 8. This means that a significant number of those in the labour market are ill-equipped in terms of skills. To some extent, dropouts at primary and post-primary levels are because of failure to match growth of public education institutions with the increasing enrolment numbers over the years. Although private institutions have come in to fill the gaps, they are costly. Thus, continued efforts to invest in education institutions and promoting alternative learning systems are critical in equipping this category of the youth. Further, despite elimination of tuition fees for these primary school students, the government needs to consider minimizing hidden costs accruing to parents by instituting policies against these costs.

While completion rate and transition rate from primary level to secondary is somehow at par, the small proportion of students advancing to tertiary education needs attention. Universities are only absorbing 2 per cent of those who enrol in Class One. As such, TVETs are expected to carry a bigger burden to expand their facilities to absorb more of these students. Continuous reviewing and updating TVET curricula is vital to ensure relevant up-to-date practical skills, and increasing chances of employability in the youth while increasing performance efficiency in roles assigned and duties allocated.

A clear framework is also required to ensure a seamless and complete transition of students from primary to secondary schools and from secondary schools to tertiary institutions. This will have a lasting long run impact on the supply of youth labour by increasing the level of skills. There is need to build capacity past secondary school education given that only 2 per cent of those who enrol in class one make it to university education. Thus, the government through KUCCPS should institute a process of 100 per cent placement of KCSE students annually in a push to improve skill pool in the labour market.

The female student's registered marginally high dropout rate in both primary and secondary school level and across all cohorts. For example, females dropout rate averaged 29.6 per cent compared to 28.9 registered by male pupils at primary school level. The graduation trends for both private and public universities reveal that the gender gap is still present, with men registering higher graduation numbers for the Bachelors, Postgraduate Diplomas, Masters and PhDs over the years. There is therefore need to evaluate the socio-economic needs of the female students through guidance and counselling to ascertain why their number has matched that of male counterparts despite strong complains to enhance the social status of the girl child.

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