

Pupil-Teacher Ratio in ECE and its Influence on Graduation Rates in Integrated Embu County Public Primary Schools, Kenya

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Abstract

Pupil-teacher ratio in Early Childhood Education (ECE) is of principal significance in the teaching and learning process. The purpose of this study was directed at realizing how teacher-pupil ratio in ECE influences graduation rates, an aspect of internal efficiency. The research was directed by correlation design and adopted stratified and simple random sampling techniques. A total of 39 public primary schools were sampled. From 39 selected schools 39 and 156 primary school headteachers and teachers respectively and 39 ECE teachers were sampled. Information for the research was gathered by use of questionnaires, documentary analysis guide and observation schedule. SPSS and Pearson correlation was used to analyze data. Findings were presented in percentages, frequencies, means, and standard deviations. Data analyzed showed positive correlation between pupil-teacher ratio and internal efficiency in public primary schools ($r = .561, n= 37, p<.01$). The study concluded that the pupil-teacher ratio was high in public primary schools which was 50:1 which exceeded the recommended ratio of 25:1. Therefore, there is need for the County government in collaboration with headteachers to deploy additional teachers in public primary schools in Embu County to offset the high pupil-teacher ratio. This will increase internal efficiency in terms of graduation rates to enhance successful transition to the next class.

Keywords: Pupil-teacher ratio, graduation rates, Early Childhood Education, integrated schools

1. Introduction

Internal efficiency suggests the degree to which resources readily accessible to the education system are being used to attain the purpose for which the educational system has been set up which is vital in assessing learning results (Argundade & Belo, 2019). According to Munawaru (2010), internal efficiency of education system comprise such concerns as pupil-teacher ratio, repetition rate, dropout rate, teacher ratio, average attendance, examination pass rate, pupils cost of education, average instructional space (teaching space per learner) and sufficient instructional

and education resources. This study used pupil-teacher ratio as an aspect of mainstreaming early childhood education that influences internal efficiency aspect of graduation rates. In this study the researcher denote internal efficiency of education as the number of ECE children entrusted or manned by an ECE teacher in integrated public primary schools. Hence, the number of children who successfully complete ECE cycle in relation to the number that was enrolled is what the investigator states as the graduation rates in the current study.

According to Dillinger (2017) graduation rates are the rate of the total number of pupils who effectively complete the preceding year of primary school in a state in a particular time. Graduation rates in this case is the same with completion rates which refers to the number of primary school graduates divided by the number of kids that have realized the primary school graduation age. Graduation rates therefore are significant indicator of the growth of educational system in a specified nation. Graduation rates help to better comprehend the social factor constraining population's general well-being. Thus, low primary school graduation rates are regularly the convergence of humble education systems shared with perplexing social settings the nation's surface. This calls for incorporation of pre-primary strategies in nationwide training sector policies which is crucial to accomplishing the Sustainable Development Goals (SDGs) (UNESCO/IIEP, 2019). The graduation rates in the current study were found to be low in Embu County integrated public primary schools which could be attributed to low graduation rates of children from early childhood education to Grade 1 in primary schools.

In the present study integration which denotes mainstreaming of ECE was used to denote incorporation of ECE classes into public primary schools. This is so since mainstreaming is a machinery used to address constraints of guaranteeing reasonable equitable education to ECE; constructing ECE systems to provide quality at scale and considerably increasing financing for ECE methodically, establishing the pre-primary sub-sector and increasing its capacity to provide equitable and quality ECE to all kids. Thus, reliable training sector plans that incorporate pre-primary affords the foundation by which nation can deliver sufficient educational services (UNESCO/IIEP, 2019).

The UN agreement on the freedoms of children 2001 Articles 28, 29, and 30 uphold the liberties of kids to compulsory and right to basic education. This is of utmost worth to the scholar for it perceives ECE as a component of basic education. Further, countrywide agreement that engaged boundless concern on ECE was World Summit for Children (WSC) which was held in Moscow in 2010. This agreement gave importance to the growth of ECE adjustments such as the establishment of schooling, healthcare, diet, and welfare of kids of birth to eight years old which is acute for initial internal efficiency in ECE establishments and consecutive teaching. Subsequently, countries put their intentions to capture endorsements in agreements on ECE (UNESCO, 2010). The Millennium Development Goals (MDGs) 2010 contracted with goals to be recognized by 2015. Amongst the five goals that focused on the teaching of the young kids; goal 2 is considerable to the scholar as it was on the achievement of the global elementary teaching, where ECE kids need attention in the initial stages which fix them for prospect

preparation. These treaties aimed to enhance graduation rates in ECE which is considered in the present study.

Sustainable Development Goals (SDGs) got ahead of MDGs in the year 2015 with extraordinary prized education (Goal 4), whereas additionally bearing in mind that ECE as the basis for sustainable development. Markedly, goal 4 targets 4.2 stated that by the year 2030, nations require assurance that all girls and boys are necessitated to realize high-valued early year's growth and child-care training in readiness to transit to basic education which could enhanced favorable pupil-teacher ratio in schools. The researcher considered both girls and boys as children in ECE schools in Embu County, Kenya.

According to The School of Perception Hun (2019) pupil-teacher ratio denotes the total number of children under every trainer in an ECE school. The pupil-teacher ratio mirrors the workload and how accessible they are to bid services and care to their children. The lesser the total number of children, the healthier the learning progression and education will be. The pupil-teacher ratio has been found to be one of the resilient signs of children's accomplishment and commitment. The lesser the pupils under a teacher, the more diligent they're capable of adapting their training to the precise learning techniques. Additionally, they are able to grow healthy on one-on-one mentoring interactions and bid comprehension and assist in methods that would be unbearable in a bigger teaching space. Furthermore, a lesser ratio will ease the assignment for educators, allowing them to pay attention on the worth of their training and education. The smaller set of kids is additionally likely to sense satisfied expression of their sentiments, asking questions, and making their requests recognized. This set up also affords additional maintenance for children who may be stressed by education problems in any specified subject. Embu County public primary schools experienced high pupil-teacher ratio which inhibited favorable graduation rates.

2. Literature Review on pupil-teacher ratio for Early Childhood Education and graduation rates in schools

Kenton (2014) assert that the pupil-teacher ratio (PTR) is the percentage of children to educators in an entity such as nation, School County or school. From the research findings, the pupil-teacher ratio is a pointer that displays how revenues in education are distributed. The research contended that the pupil-teacher ratio is connected to efficiency since it is linked to better working circumstances and less strain. Hence, instructors are found to be more helpful when they are accountable for lesser groups of kids. This is for the reason that a lower pupil-teacher ratio progresses working condition in ECE locale since educators can give adequate consideration to diverse growing fields and build more considerate and significant collaborations with kids. Hence, as the number of educators rises, instructors spend more time in deterring and monotonous dialogue with kids and less in helpful verbal communications. The reviewed study informs the researcher on importance of percentage of kids to educators as it denotes pupil-teacher ratio. According to the Department for Education, United Kingdom (2011), pupil-teacher ratio measures the number of kids per educator which echoes educators' work load and the

accessibility of educators' services to their kids. In addition, the pupil-teacher ratio tests the sum of kids per stream at the elementary schools, lower secondary and all levels of schooling. Hence, the lesser the pupil-teacher ratio, the greater the accessibility of educators' services to their kids (Is, Ratio how, & Are, 2005). The researcher found that pupil-teacher ratio was quite in integrated primary schools in Embu County. According to Summary (2000), pupil-teacher ratio matches the sum of learners to the number of educators available to serve pupils such as trainers, paraprofessionals, officers and others who might be in interaction with pupils when likened to the aggregate number of learners. The research contends that pupil-teacher-ratio mediations afford partial description of the influence on the attainment dissemination, which set up a insubstantial guide for policymakers. However, traditional economic theory proposes that small teacher ratios have a positive impact on attainment (Balestra, Backes-gellner, Zürich, Balestra, and Backes-gellner 2017) while high pupil-teacher ratio upsets the quality of learning in educational institutions with deprived resources (Nyiwa, Maithya, & Gathumbi, 2017). Department for Education, United Kingdom (2011) report found that the within-school pupil-teacher ratio for each phase of education; is calculated from the Yearly school Tally by taking the full-time corresponding number of learners on roll in schools and dividing it by the full-time corresponding number of trained educators frequently working in schools which define the total sum of skilled teacher resource per kid. Solheim and Opheim (2019) discoursed that the pupil-teacher ratio is got by dividing the figure of full-time equal pupils at a certain level of schooling by the total of full-time equal educators at that level and in related natures of institutions. However, the ratio does not take into account teaching period likened to the length of a teacher's working day.

Balestra et al (2017) carried out a research on the assorted effects of pupil-teacher ratio policies class size reduction and teacher aide. The authors used data from the project STAR experiment. This large-scale-randomized class-size experiment took place between 1985 and 1989 and involved 11,600 children from kindergarten through third grade in 42 districts and 79 participating schools for 4 years. The project STAR had solicited data via interviewing, visitation of sites for verification of class size and data collection. The journalists used Stanford Achievement Test (SAT-9), which is standardized and used multiple-choice test, which included mathematics, reading, and word identification as a subject area analyzed using percentiles or standardized scores (Z-scores) and data analyzed by use of descriptive statistics and F-test of hypothesis. The investigator used questionnaire, observation schedule and document analysis guide to solicit information from primary headteachers and teachers and from the ECE teachers. In addition, this study was done in kindergarten through standard three in Tenesee, USA a developed country and could not be generalized in Kenya a developing country. The reviewed study employed experimental design with interviews and visitation of the sites to get verification of the class size. Additionally, this study used Stanford Achievement Test (SAT-9) and multiple choice tests to get data. Further, Subjects such as mathematics reading and word identification was analyzed using percentiles/Standardized scores (Z-scores), whereas data got was analyzed using descriptive statistics and F-test of hypothesis. The current study analyzed quantitative data

using descriptive and inferential statistics and qualitative data analyzed using content analysis thereby adding literature to the existing body of knowledge. The study revealed that being assigned to a small class has a positive effect on test scores throughout the entire achievement distribution ($p < 0.00$). The authors also found that at the bottom decile of the distribution, children assigned to smaller classes scored 2.5 percentage points higher than those assigned to the control group. This study informed the current study on the importance of using descriptive statistics in analyzing data. The study findings showed that the average children gain the most from being assigned to smaller classes. Balestra et al (2017) recommended that policy makers take precautions when designing educational reforms regarding distributional goals and how these goals are affected by intervention rather than its impact on the average child. The researchers did not bring out institutions efficiency as a result of lean child-teacher ratio, but the current study explored that out. The reviewed study never showed how respondents were selected. However, the researcher selected respondents by use of simple random sampling thereby filling knowledge gap.

Opanuga, Okagbue, Oguntunde and Amina (2019) conducted a study on learning analytics: Issues on the pupil-teacher ratio in public primary schools in Nigeria. The data used were obtained from a complete enumeration of the records of each school. Study findings revealed that the pupil-teacher ratio obtained from the analysis was higher than the national average. Further, the authors found that with a pupil-teacher ratio of 35 being a benchmark of primary schools in Nigeria, only 25 (19%) out of 133 primary schools had realized an acceptable pupil-teacher ratio which showed that majority of primary schools had high pupil-teacher ratio in Nigeria. Despite the study informing the current study on the pupil-teacher ratio, secondary data were used, creating a research gap. The current study filled the research gap by adopting the use of both primary data collected using questionnaires and observational schedule and secondary data by use of documentary analysis guide. The study was done in primary schools in Nigeria. However, the researcher did study in ECE schools in Embu County, Kenya to fill the gap.

Ngirera (2018) carried out a study on centre related factors influencing implementation of curriculum in early childhood development programmes in Turkana County, Kenya. The study used descriptive survey design and adopted observation and interview schedules to source data from 55 teachers who were purposively sampled in 55 ECD centres. Study findings showed that pupil-teacher ratio was very high and had negative effect on the implementation of ECDE curriculum. The reviewed study was conducted in Turkana County which is an arid area and therefore may not be generalized in Embu due to social economic factor which affect learning. Additionally, the reviewed study used descriptive survey design and collected data via observation and interview schedule from teachers. Therefore, this study used correlation study and collected data by use of observation schedule, document analysis and questionnaire from headteachers, primary teachers and ECE teachers to fill the literature gap. The reviewed study informed the current study on the importance of using observation schedule in collecting data for the study.

Teacher-pupil ratio influences use of game in teaching mathematics which was confirmed by Murungi's (2018) study done in Kajiado Central sub-County, Kenya. Murungi aim was to establish the teacher-pupil ratio and its influence to using game in teaching mathematics. The study used descriptive survey design and collected data by use of questionnaires and document analysis from 29 pre-school teachers sampled using stratified sampling. Data was analyzed by use of descriptive statistics and results presented in tables. This study was not related to the present study since it did not focus on how instructional materials for all subjects taught in preschool influence internal efficiency which the researcher focused on thereby filling knowledge gap. The study findings revealed that teacher-pupil ratio was a significant variable in teaching mathematics which could not be achieved for large classes. In addition, the study found that the staff presents in schools were inadequate. The reviewed study used descriptive survey design and collected data from preschool teachers who were selected using stratified sampling and got data by use of questionnaire and document analysis. However, the present study used correlation research design and collected data from primary headteachers and teachers, and pre-primary teachers and got data from them by use of questionnaires. Additionally, the researcher used document analysis and observation schedule thereby adding literature to the existing body of knowledge. This study informed the researcher on importance of using questionnaires and document analysis in getting data. Additionally, the reviewed study informs the current study on importance of using descriptive statistics in data analysis. Further, this study informed the researcher on importance of using preschool teachers as sources of information.

In his study done in Mwingi North sub County, Kenya, Kyambi (2019) assessed effect of pupil-teacher ratio on curriculum implementation practices in public primary schools. The study did descriptive survey design with questionnaires and interview schedule to get information from 88 teachers sampled randomly and 3 Education Officers who were purposively sampled. The study analyzed data by use of descriptive statistics and data presented in percentages, frequencies, means and standard deviation while qualitative data was analyzed based on themes. This study was conducted in primary schools and used teachers and education officers as respondents. However, the researcher used ECE schools attached to public primary schools and used information from teachers and headteachers and ECE teachers as respondents to fill knowledge gap. The study revealed that high pupil-teacher ratio had a significant negative effect on teaching and learning due to heavy workload. The reviewed study used descriptive research design with questionnaires and interview schedules to get data from respondents. However, the present study employed correlation research design and got data by use of questionnaires, document analysis guide and observation schedule from respondents. While the study used descriptive research design and collected data using questionnaire and interview schedule there were no quantitative findings; therefore, the present study analyzed quantitative data using descriptive and inferential statistics and qualitative data was analyzed using themes thereby adding literature to the existing body of knowledge. This study informed the present study on importance of using questionnaires in getting responses. Additionally, the reviewed study informed the researcher on importance of using teachers as respondents for the study. This study was not related to how pupil-teacher ratio

in ECE influence internal efficiency and therefore the need to conduct the present study to fill the gap.

Nyiwa, Maithya and Gathumbi (2017) conducted a study in Kitise Division, Makueni County which aimed to investigate the influence of pupil-teacher ratio on KCPE performance in primary schools. The study used descriptive survey design with questionnaires to get information from 24 headteachers and 119 teachers who were randomly selected. Data obtained was analyzed by use of descriptive statistics. Study result showed that high pupil-teacher ratio in the schools affected KCPE performance affecting efficiency of schools. While the reviewed study adopted descriptive survey design, the researcher used correlation design and got information from primary headteachers, primary teachers and ECE teachers who were purposively selected. Additionally, the present study analyzed qualitative data thematically and quantitative data was analyzed using descriptive and inferential statistics to fill the literature gap. This study informed the researcher on importance of using questionnaires in getting information from the respondents. Additionally, the reviewed study informed the current study on importance of using headteachers and teachers as respondents for the study. Further, the reviewed study informed the present study on importance of using descriptive statistics in analyzing data. This study was conducted in public primary schools. However, the present study was conducted in ECE schools attached to public primary schools to fill the literature gap. This study informed the researcher on importance of exploring how pupil-teacher ratio influences KCPE performance in primary schools.

A study conducted in Makueni, Kenya by Nyiwa, Maithya and Mungai (2017) sought to find out influence of pupil-teacher ratio on performance in certificate of primary education with the aim to investigate the influence of pupil-teacher ratio on KCPE performance. Kanini et al (2017) used a target population of 24 headteachers and 172 teachers. The study adopted descriptive survey design with questionnaires to get data from a sample of 24 head teachers and 119 teachers. The study results revealed that high pupil-teacher ratio affected KCPE performance. The study recommended that government should employ the high number of pupils in primary schools to decongest the existing ones. While the reviewed study adopted descriptive survey design study and solicited information by use of questionnaires from a sample of 24 headteachers and 119 teachers the investigator adopted correlation study and got information from respondents using questionnaires, observation schedule and document analysis. The reviewed study informs the current study on importance of using questionnaires in soliciting information from the respondents.

3. Methodology of the Study

The study adopted correlational strategy to discover how pupil-teacher ratio in ECE influenced graduation rates in integrated Embu County public primary schools. The study targeted population of 381 and 3951 public primary headteachers and teachers, and 483 ECE teachers in 381 public primary schools in Embu County, Kenya. The investigator used purposive sampling

technique to sample 39, 156 and 39 primary headteachers and teachers and ECE teachers respectively from 39 public primary schools which were stratified sampled. Questionnaires were used to collect data from headteachers in regard to PTR in their primary schools and their level of satisfaction about the respective ratio. Also using the questionnaires, headteachers were asked to indicate pupil PTR in ECE from year 2014 to 2020. In addition, the headteachers through the questionnaires were to state what happens when ECE classes their schools are congested. Further, questionnaires were used to get data from headteachers to get enrolment in ECE from 2014 to 2020, indicate retention and graduation rates in ECE. ECE teacher questionnaires solicited information on PTR, enrolment and status of their satisfaction about the ratio. In addition, the questionnaire sought data on how level of PTR in their classes help in promotion of children. Further, Questionnaire for ECE teachers pursued their level of agreement on progression of pupils who begun schooling in their schools right from pre-primary to primary schools. Primary teacher question sought data on PTR in study schools and how it help in smooth transition from pre-primary to early grades. Also this questionnaire required primary teachers to indicate level of their agreement on pupils performing well in Kenya Certificate of Primary Education (KCPE) due to adequate number of teachers in all classes. Further, Primary teacher questionnaire sought enrolment of pupils in primary teachers' classes and compare it with its cohort when they were in ECE class. For the purpose of triangulation of data, document analysis guide was used by the investigator to sought level of adequacy in regard to enrolment of teachers and enrolment of children. Observation schedule was further by the researcher to sought level of adequacy in respect to children working with ease and comfort at tables and chairs. Data was analyzed by recognizing key themes and sub-themes coherent. SPSS and Pearson correlation was used to analyses data and results were presented in percentages, frequencies, means, and standard deviations.

4. Presentation and Discussion of Research Findings on Pupil Teacher Ratio in ECE and its Influence on Graduation Rates in Integrated Public Primary Schools.

In this section information from primary headteachers, primary teachers, and pre-primary teachers on pupil-teacher ratio in ECE influences graduation rates in integrated public primary.

The investigator sought to find out the number of teachers and pupils, level of agreement and satisfaction on PTR, level of adequacy of teachers and pupils to establish graduation rates in children as shown in Table 1

Table 1: Pupil-teacher ratio in preprimary schools and graduation rates in children

	Mean
Average pupil/teacher ratio	1 to 50

According to Table 1 average pupil-teacher ratio is 50 to 1. This suggests that every preprimary teacher held up to 50 kids which infer that graduation rate may be stressed by the big number of

kids in a class since a standard preprimary class should have a maximum of 25 kids as per the Ministry of Education (2018). This suggests that the big number in preprimary class may be due to having preprimary 1 and 11 being pooled for lack of adequate preprimary classes which pose challenge of handling the two classes together under one teacher which may affect graduation rates in kids. Also it denotes that a teacher to handle kids of two different classes may be very challenging which denotes that it may affect individualized teaching and syllabus coverage which further implies that it may affect graduation rates in kids. This finding is in agreement with production function theory by Mace (1979) which looks at internal efficiency as an achievement (output) and in this case graduation rates which is impacted by the situation of pupil-teacher ratio in preprimary schools (input). Hence, the high the pupil-teacher ratio the lower the graduation rates in children due to lack of individualized teaching. The lower the teacher-pupil ratio in a class, the higher the graduation rates in preprimary schools which denotes the more the retention, completion, graduation and transition rates in preprimary. Therefore, there is a need to follow the preprimary policy which advocate pupil-teacher ratio of 25:1 as indicated in the Ministry of Education (2018).

Further, the investigator sought to find out whether the headteachers were comfortable with the level of pupil/teacher ratio with the aim to establish whether there were new measures taken to help the situation improve graduation rates in children. Table 2 presents the study results.

Table 2: Headteachers’ comfort with pupil-teacher ratio in preprimary classes and graduation rates in children

	Frequency	Percentage
No	20	54.1
Yes	17	45.9
Total	37	100

As indicated in table 2, majority 20(54.1%) of headteachers indicated that they were not comfortable with high pupil/teacher ratio in preprimary schools. This infers that the number of children per class was more than the recommended one of 25 children per class (Ministry of Education, 2018). It also implies that when kids are more than the recommended number, more teachers to handle them will need to be employed which means that a school will need to have more resources to enable it meet this demand of high pupil-teacher ratio to enable favorable graduation rates in kids. Hence, it suggests that when a school lacks adequate resources particularly inputs such as adequate teachers to handle big number of kids, it can put headteachers to a disturbing situation since this may be a pointer to less efficient schools marked by low graduation rates in kids. This study finding is similar to the study conducted in Makueni County, Kenya by Nyiwa, Maithya and Gathumbi (2017) who revealed that high pupil-teacher ratio in the schools affected KCPE outcome which was an indication of low internal efficiency in schools.

The scholar also sought to determine the pupil/teacher ratio in pre-primary class (es) in schools from 2014 to 2020 with the aim to find out whether graduation rates in children has been improving to enhance internal efficiency in pre-primary schools. Table 3 presents the study results.

Table 3: Pupil/teacher ratio in pre-primary class and progress in graduation rates in children

Years	2020	2019	2018	2017	2016	2015	2014
Average pupil-teacher ratio	1:50	1:50	1:45	1:47	1:45	1:47	1:40

According to table 3, pupil teacher ratio from year 2014 to 2020 ranged between 40 and 50. Responses from the primary teachers showed that pupil-teacher ratio was 50:1. From the findings it is clear that the ratio has been increasing an indication that there is no much attempt that has been made to separate preprimary 1 and preprimary 11 to enable success in teaching and learning of kids. Additionally, the high pupil-teacher ratio implies that more pre-primary teachers need to be deployed to preprimary schools by the county government to enhance teaching and learning which could improve graduation rate in kids. Most of the teachers stated that when the pupil-teacher ratio is high, the number of kids in class becomes uncontrollable while others indicated that there was a high workload. Similarly, Kyambi’s (2019) study findings revealed that there was high pupil- teacher ratio which negatively impacted on teaching and learning resulting to low graduation rates of kids in Mwingi North sub County, Kenya.

The scholar finally sought to determine whether when children of pre-primary are congested in my school, many of them eventually absent themselves from school due to lack of personalized attention during teaching and learning to establish success in graduation of children. Table 4 presents the study results.

Table 4: Absenteeism of children due to congestion in class which shows high pupil-teacher ratio in class and graduation rates in children

	Frequency	Percentage
Yes	20	54.1
No	17	45.9
Total	37	100

According to table 4, majority 20(54.1%) of the preprimary teachers showed that when kids of pre-primary are congested in my school there is absenteeism of kids due to lack of personalized attention which result to low graduation rates in kids. This implies that congestion in the class causes many kids to be absent due to lack of personalized attention. Therefore, kids lacks motivation to come to school daily which result to many of them not being ready to complete the

cycle on time which lead to low graduation rates and eventually to low retention, completion, graduation and transition rates in pre-primary schools. This study finding is in agreement with a study conducted in Turkana County preprimary schools by Ngirera (2019) who found that pupil-teacher ratio were very high and impacted negatively to teaching and learning caused by few trained teachers who could hardly give personalized attention to kids which resulted to low graduation rates of kids.

The investigator also sought to determine whether pupils in schools do well in their KCPE due to favorable pupil-teacher ratio in preprimary schools to establish whether favorable pupil-teacher ratio laid strong foundations to enhance smooth transition rates from preprimary to primary schools. Table 5 presents the study findings.

Table 5: Pupils in school do well in their KCPE due to favorable pupil-teacher ratio in preprimary schools as a foundation for smooth graduation and transition rates in primary children

	Frequency	Percentage
Strongly agree	13	8.9
Agree	20	13.8
Undecided	35	24.1
Disagree	67	46.2
Strongly disagree	10	6.9
Total	145	100

From table 5, majority 67(46.2%) of primary teachers disagreed that their pupils do well in Kenya Certificate of Primary Education (KCPE) because there has been favorable pupil-teacher ratio in preprimary schools as a foundation for smooth graduation and transition rates in primary schools. This implies that pupil-teacher ratio has not been favorable in preprimary and in other primary school classes which implies that graduation and transition rates may not have been favorable in primary schools. It also implies that teachers were not adequate in primary classes which may have affected KCPE results negatively due to poor pupil-teacher ratio foundation in preprimary schools. Document analysis showed that majority 13(36.1%) of examination records in study schools indicated that it was inadequate.

A Pearson product-moment correlation was also carried out to establish the relationship between pupils-teacher ratio and internal efficiency. This is as presented in table 6

Table 6: Pearson product-moment correlation results for teacher-pupil ratio and internal efficiency

		Internal Efficiency	Teacher-pupil ratio
Internal Efficiency	Pearson Correlation	1	.561**
	Sig. (2-tailed)		.000
	N	37	37
Teacher-pupil ratio	Pearson Correlation	.561**	1
	Sig. (2-tailed)	.000	

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

According to table 6, there is a positive correlation between teacher-pupil ratio and internal efficiency in public primary schools ($r = .561, n= 37, p<.01$) in terms of graduation rates. Teacher-pupil ratio contributes 56.1% increases changes to internal efficiency in terms of graduation rates. Correlation refers to the strength of an association between two variables. This suggests that when the teacher-pupil ratio increases, the graduation rates increases hence children transit successfully to the next class.

5. Conclusion and Recommendations

The researcher recognized that the pupil-teacher ratio in preprimary schools was 50:1 which is above the recommended ratio of 25:1 pupil-teacher ratio. The study recommends County governments to deploy more teachers to preprimary schools to counterbalance the high ratio. In addition, the inquiry established that headteachers were not contented with high pupil-teacher ratio in preprimary schools. Similarly, the study recommends headteachers to work hand in hand with the county government and parents to get more teachers to ease the situation of high pupil-teacher ratio in preprimary schools. Primary teachers disagreed that pupils do well in Kenya Certificate of Primary Education (KCPE) because there has been favorable pupil-teacher ratio in preprimary schools as a basis for smooth graduation and transition rates in primary schools. Additionally, the investigator recommends headteachers to guarantee recommended pupil-teacher ratio of 25:1 is strongly monitored in schools to lay strong groundwork for primary education right from preprimary level for smooth retention, completion, graduation and transition rates in children.

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