International Journal of Trend in Scientific Research and Development (IJTSRD)
International Open Access Journal
ISSN No: 2456 - 6470 | www.ijtsrd.com | Volume - 2 | Issue – 2

Infrastructure and culture as competitive advantage in enhancing secondary school's performance in Kenya Certificate of Secondary Examination in Kenya. A case of Bungoma County

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ABSTRACT

Secondary schools incubate and hatch the youth from their teens and transform them into adults in pursuit of vocational and academic careers in the Kenyan economy. The success of a secondary school is determined by the performance of its students in Kenya certificate of secondary examination. Each secondary school should identify its competitive advantage that would help it to ensure high performance in Kenya Certificate of Secondary Examination (KCSE). This study aimed at examining school infrastructure and culture as competitive advantage that would enhance school's performance in KCSE. The study used descriptive survey design. The target population was 4112 encompassing major stakeholders in the provision of education. Sample of the study was 317. Stratified random sampling was applied to pick 84 principals, 118 school board members and 115 Parent and Teachers Association (PTA) members as respondents for the study. Questionnaires were used to collect data which was analyzed using SPSS computer processing package. The study found that well established school culture and infrastructure enhance school's performance in KCSE. ICT did not show any significant contribution to schools' KCSE performance in Bungoma County.

Keywords: *KCSE performance, Competitive advantage, school infrastructure & culture.*

I. Introduction

Before the coming of Europeans, Kenyan society had informal type of education. There were no classrooms and no special class of people called teachers. All members of the community were involved in the education of children. The foundation of modern education was laid by missionaries who introduced reading and writing in spreading of Christianity. After attainment of independence in 1963 the Kenya Government embarked on speeding up education by establishing more primary and secondary schools. By 1963 there were about 151 secondary schools in Kenya with pupils' enrolment of 30120. Currently (2017) there are about 8592 public secondary schools with enrolment of about 2.5million pupils. Kenya has prioritized education at all levels. Education is the key to social and economic development. Secondary school education in Kenya aims at meeting the needs of students who terminate their education after secondary school and also those who proceed on to tertiary education. The national examination conducted in secondary schools in Kenya is called Kenya Certificate of Secondary Examination (KCSE). In this examination, the average grade is based on performance in seven subjects. University admission is based on the best seven subjects and performance in particular subjects.

II. Statement of the problem.

Since independence in 1963, the education system in Kenya has never been a level playing ground. The KCSE examination confirms that there is disparity among various secondary schools, yet KCSE certificate is used as a form of enhancement, greater individual autonomy, empowerment and distribution of opportunities for both boys and girls graduating from these secondary schools. Each school should identify and exploit its competitive advantage to enhance its performance in KCSE. The researcher opted to evaluate the role of school infrastructure and culture as competitive advantage in KSCE performance in Public secondary schools in Kenya a case of Bungoma County.

III. Objectives of the study

- Assessment of school infrastructure as a competitive advantage in KCSE performance in public secondary schools in Bungoma County
- Assessment of school culture as competitive advantage in KCSE performance in public secondary schools in Bungoma County

IV. Operational definition of terms used in the study

- **Competitive advantage**: Competitive advantage is a situation whereby a secondary school attributes allows it to perform better than other schools by achieving a higher mean score in Kenya Certificate of Secondary Examination.
- **School infrastructure**: School infrastructure include classrooms, dormitory and laboratories for science practical
- **School Culture**: School culture includes norms and rituals that bring sense of belonging, participation, peer relationship, work habits, social courtesy and a strong commitment to academic achievement.

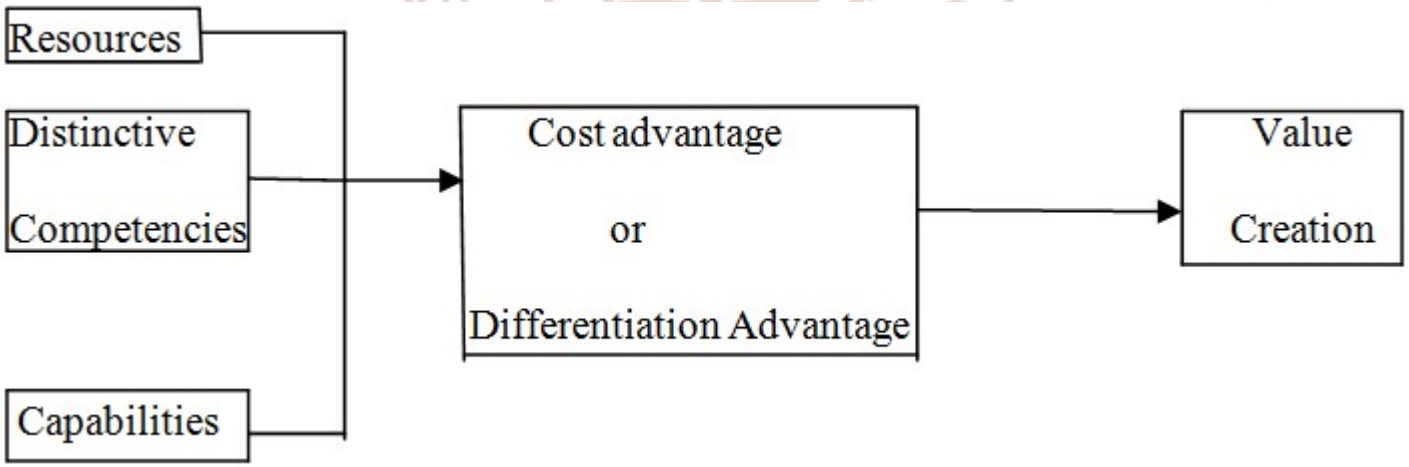
2. Literature Review

(i) Theoretical Review

Competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing products (product differentiation advantage). Competitive advantage enables the firm to create superior value for its products and services thus, higher profit for itself and higher customer satisfaction. Resource-based view emphasizes that a firm utilizes its resources and capabilities to create a competitive advantage that ultimately results to superior value creation.

Sustainable competitive advantage is the prolonged benefit of implementing some unique values thus creating a unique combination of internal organizational resources and capabilities that cannot be replicated by competitors. The strategy applied here is creating products, processes and services that cannot be matched by competitors and coming up with ways of sustaining it.

(ii) Model of Competitive Advantage



(iii) School infrastructure

According to Oyoo (2012), school infrastructure is a key base for learning in schools. School infrastructure include classrooms, science laboratories, open fields for games, game equipments, dormitories, sanitation facilities and others. It is in classrooms were day to

day formal teaching and learning takes place. From libraries learners get the opportunity to conduct their own personal studies or research. Extra-curricular activities take place in the field. Teachers and students need to be housed in the school and at the same time need sanitation facilities like toilet, waste disposal services, clean water etc. For this reason, school infrastructure is a very important component in ensuring successful school performance in both internal and national exams.

Karimi (2011) identified strong relationship between science laboratories, text-books and classrooms with students' performance in KSCE. Schools with these facilities perform better in exams than those without. Experience and high qualification of teachers contribute to higher performance of students in national examinations but Ambogo (2012) found significant difference in schools performance in KSCE despite the schools having the same type of teachers in terms of education level and teaching experience.

According to Mong'are (2011) the management of physical resources is a crucial aspect of the overall management of a school. The physical resources play a key role in the attainment of the school's intended objectives. A direct correlation exists between quality of school facilities provided and performance in national examinations. Proper management of physical resources therefore makes a school to stay on top at KCSE performance. According to Okeno (2011) favorable attitude towards school infrastructure and quality facilities promote performance in secondary school examination.

The Kenya Education Staff Institute KESI (2011) highlights the importance of information and communication Technology (ICT) in education. Beside effective teaching /learning, using ICT can help to improve teacher and student skills and performance. It can also help to maintain high quality teaching /learning while cutting down on teaching and using cheaper aids. ICT applications improve teacher and student motivation. It makes teaching and learning more varied and interesting thereby enhancing sustained performance in examinations.

Schools with adequate teaching and learning materials perform better in examinations. According to (Kosgey et al 2006) it is costly to construct or expand schools. Disbursement of free secondary school funds poses a challenge as schools in remote areas receive the government funds at the end of the term instead of beginning of the term. According to Glewwe and Jacoby (2005) many students in developing countries travel long distances to attend schools. This affects their performance in school.

(iv) The role of the School Culture on performance

According to Omusonga, Kazadi and Indoshi (2006) school culture refers to a set of accepted beliefs and norms that govern people's conduct in a school. Schools with a culture that favors teachers' capacity building, parental involvement, career guidance and counseling, teaching and learning tend to have high expectations for and recognition of academic and co-curricular achievement. Such schools tend to perform better in the national examinations. Schools with a culture that emphasizes on good instructional policies perform better in KCSE compared to those which have weak instructional policies (Mwangi 2011).

The Character Education Partnership (CEP, 2010) points out that, education in Kenya is at defining moment. Successful schools foster both academic excellence and ethics. Such schools have positive culture. A positive school culture is broadly defined to include the school wide ethos and the culture of individual students, high expectations for learning and achievement, a safe and caring environment, shared values and relational trust, a powerful pedagogy and curriculum, high students motivation and engagement, a professional faculty culture and partnership with families and the community. Character includes treating others with respect and commitment to quality. A true school character has a school culture that requires the best out of students and teachers in both realms- doing one's best work and being one's best ethical self.

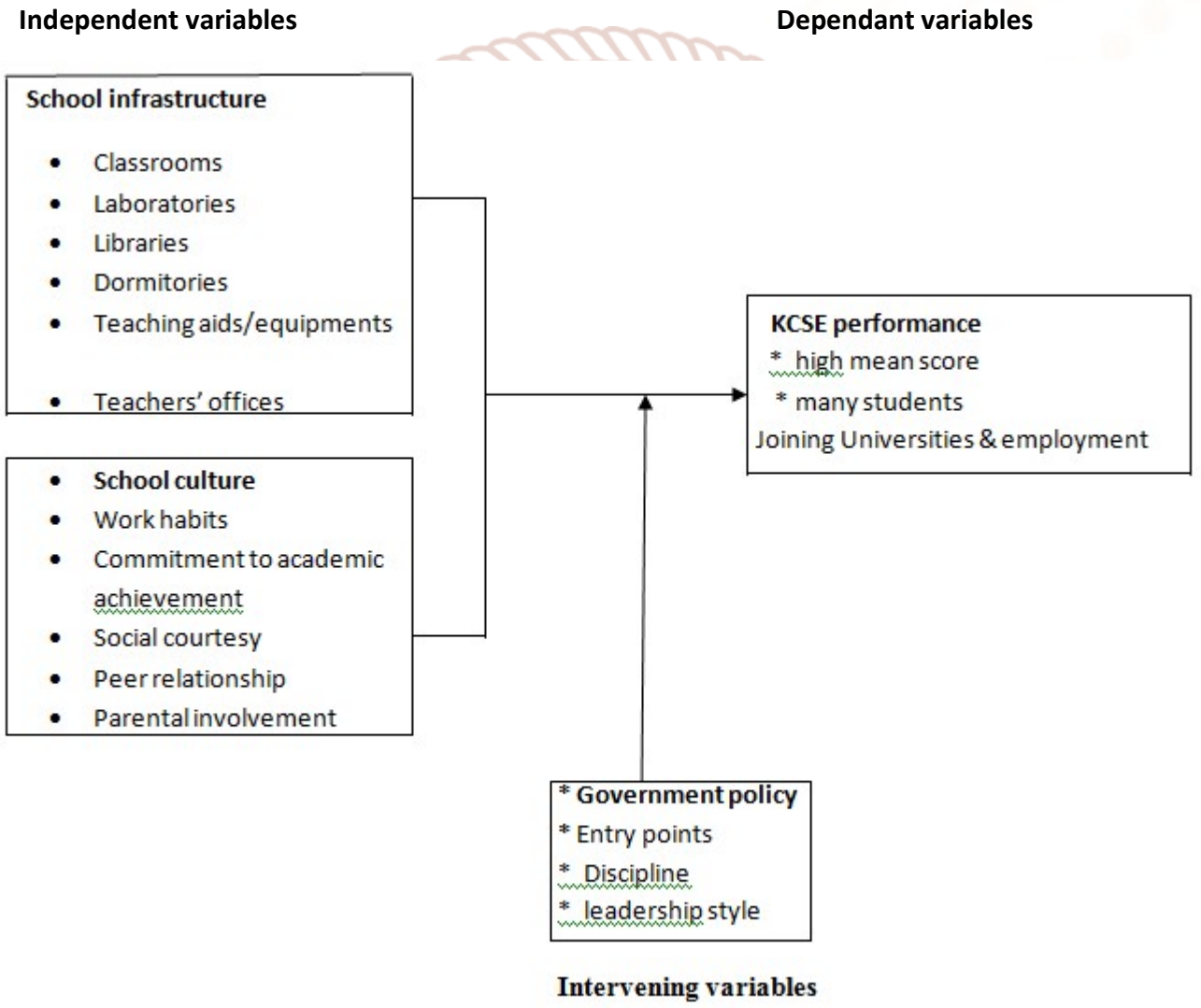
Performance excellence and ethical excellence are born from a culture. Berger (2003) observed that students' achievement and character are shaped by the culture around them. Regardless of their background, when students enter a culture that demands and support quality work and moral character they tend to fit into that culture. Once they enter a school culture with a powerful virtuous ethics that ethics becomes their norm.

Darcia (2010) argues that positive school climate meets students' needs for belonging, competence and autonomy. She says student motivation and learning produce the best results. Positive school culture is

build by first looking beyond test scores, having a comprehensive understanding of what school culture is and finally possessing tools for development. Collective commitment and hard work promote school performance and sustain it. Kakamega high school has been doing well in sports year in year out. The secret of remaining top in co-curricular according to the school principal Minishi is pegged on the belief that success attracts more success. Kakamega high school has a history, a tradition of success in the area of soccer and rugby upon subsequent generations of teachers and students. The school also boasts of excellence in academic world (Indimuli, 2013).

(iv) Conceptual Framework

The conceptual framework shows the relationship between independent variables, dependant variables and intervening variables. School infrastructure and culture are the independent variables, KCSE performance is the dependant variable while intervening variables are government policies, entry points, discipline and school leadership style.



Source: Researcher 2017

3. Research methodology

The study applied descriptive research design and targeted 257secondary school principals, 1542 Parents &Teachers association (PTA) and 2313 School board members (SBM). Total 4112 respondents in Bungoma County. The sample size was determined using Yemane (1967) formulae.

$$\pi = \frac{N}{1 + N(e)^2}$$

Where π = sample size

N = Total population (4112)

E = sampling error of 0.09 (9%)

The sample size for principals is

$\pi = \frac{257}{1+ 257\ (0.09)^2}$

$= \frac{257}{3.0817}$

$= 83.39$

= 84 Respondent

The required sample size for principals is 84

Sample size for the School board members

$\pi = \frac{N}{1+ N\ (e)^2}$

$\pi = \frac{2313}{1+2313(0.09)^2}$

$= \frac{2313}{19.7353}$

$= 117.201$

118 Respondents

Sample Size for PTA respondents

$\pi = \frac{N}{1+ N\ (e)^2}$

$\pi = \frac{1542}{13.4902}$

$= 114.305$

115 respondents

(i) The Sampling procedure

The nine districts of which all together make Bungoma County were included in the study.

The table below shows the distribution of the respondents district-wise.

Name of District	Population per District 257	Sample size per District
Kimili	$\frac{27 \times 84}{257}$	9
Mt Elgon	$\frac{12 \times 84}{257}$	4
Cheptais	$\frac{15x84}{257}$	5
Bungoma East	$\frac{53x84}{257}$	17
Bungoma North	$\frac{33x84}{257}$	11
Bungoma Central	$\frac{27x84}{257}$	9
Bungoma west	$\frac{22x84}{257}$	7
Bumula	$\frac{33x84}{257}$	11
Bungoma South	$\frac{33x84}{257}$	11
TOTAL	9	84

Tables showing sample size of the School board members (SBM)

District	Population per district x 118 / 2313	Sample Size per District
Kimilili	243 X 118 / 2313	12
Mt Elgon	135 X 118 / 2313	6
Cheptais	135 X 118 / 2313	7
Bungoma East	477 X 118 / 2313	24
Bungoma North	297 X 118 / 2313	15
Bungoma Central	243 X 118 / 2313	12
Bungoma West	207 X 118 / 2313	11
Bungama South	297 X 118 / 2313	15
Bumula	306 X 118 / 2313	16
TOTAL		**118**

Table showing Sample size of the PTA

Name of District	Population per District x 115 / 1542	Sample size per District
Kimilili	162x115 / 1542	12
Mt Elgon	72x115 / 1542	5
Cheptais	90x115 / 1542	7
Bungoma East	318x115 / 1542	24
Bungoma North	198x115 / 1542	15
Bungomma Central	162x115 / 1542	12
Bungoma West	138x115 / 1542	10
Bungoma South	198x115 / 1542	15
Bumula	204x115 / 542	15
Tota	19	115

Stratified sampling was used to select respondents for each sub-County. Therefore, respondents selected were 84 Principals, 118 SBM and 115 PTAs. Total of 317 respondents. Simple random sampling was used to pick respondents from each sub-County.

(ii) Data Collection

Questionnaires were used for data collection. The study used descriptive survey design

4. Data analysis, interpretation and presentation

Response rate.

Out of the 317 questionnaires that were distributed to the respondents, 296 (93.4%) were returned dully filled.

(i) The role of Public Secondary School infrastructure on KCSE Performance in Bungoma County

The respondents were requested to show the level of availability of infrastructural facilities in relation to KCSE percentage mean score in their secondary schools. The facilities considered were;- ICT laboratories, science laboratories, library/classrooms, dormitories, play-grounds, water/electricity and teachers' houses.

- **ICT Laboratories and school performance**

The study sought to find out whether ICT had significant influence in schools' performance in KCSE. The respondent schools with adequate ICT facilities had percentage mean score of 49% in KCSE while those with inadequate ICT laboratories had a percentage mean score of 51% in KCSE. The study did not find significant relationship between KSCE performance and ICT application in Bungoma County.

- **Science laboratory and KCSE performance**

The study sought to find out whether Science laboratory influences schools' KCSE performance.

The respondent schools which had adequately equipped Science laboratory their

Percentage mean score was 56% while the schools with poorly equipped science laboratories had a percentage mean score of 40%. The study found strong relationship between well equipped science laboratory and school's performance in KCSE.

- **Well equipped library and schools' performance in KCSE**

The respondent schools which had well equipped libraries had a percentage mean score of 58% in KSCE performance while those with poorly equipped libraries had percentage mean score of 38%. This indicates that there is a strong correlation between school's performance in KCSE and the level of learning facilities in the school library in Bugoma County.

- **Dormitory and its influence on school's performance in KCSE.**

The study aimed at finding out whether dormitories influence the school performance in KCSE.

The responded schools which had dormitories for their students had percentage mean score of 56 % while the schools without dormitories for their students had percentage mean score of 44% in KCSE performance. This shows that the students who are boarded in school perform better in KCSE than day students (students who do not sleep in school but go home after official class hours) .This is because the students who are boarded in school have more organized study hours than the day scholars.

(ii) The School Culture and KCSE performance.

The study sought to find out whether school culture has any influence on KCSE performance in Bungoma County. The items considered were:-

Clearly stated rules and regulations, extra-curricular, mutual respect for individual differences, open door communication between students and teachers, positive identification with the school, sense of belonging & norms for participation, schools partnership with community and teachers/students working as a team. The majority of the respondents (90%) agreed that good school culture has significant influence to school's performance in KCSE.

3. Conclusion

According to Kenya Education Staff Institute KESI (2011) Information, Communication and Technology (ICT) helps in improving students' performance and skills. It helps in maintaining the quality of teaching and learning and cuts down teaching time. But this study did find significant influence of ICT application to school's KCSE performance in Bungoma County. Availability of ICT in schools in Bungoma had no

direct influence in KCSE performance. The schools with inadequate ICT laboratories had percentage mean score of 51 % in KCSE while those with adequate ICT laboratories had percentage mean score of 49%. This clearly indicates that secondary school managers in Bungoma even with adequate ICT facilities have not yet embraced the use of ICT in their curriculum delivery.

The study found that the schools with well equipped science laboratories, libraries and boarding facilities performed better in KCSE than the schools which had inadequate science laboratories, libraries and boarding facilities. Mong'are (2011) asserts that a direct correlation exists between quality of school facilities and performance in national examinations. The study reviewed that most schools in Bungoma County had inadequate science laboratories, classrooms, libraries and ICT facilities thus contributing to poor performance in KCSE. Okeno (2011) asserts that school managers should maintain favourable attitude towards school infrastructure and quality facilities to promote secondary school education.

The study also found strong relationship between school culture and KCSE performance. The schools with more parental involvement in school matters, strong desire for academic achievement, discipline, and team-work among students and teachers performed better in KCSE.

4. Recommendation

The schools which build their competitive advantage on infrastructure and healthy culture compete more favorably with greater success and less difficulties. School management should provide diverse appropriate quality resources and an enabling environment to enable the students excel in their exams. Students, teachers, parents and all other school stakeholders should be encouraged to work as a team for better KCSE results. The ICT application in Bungoma County secondary schools should be boosted and used in curriculum delivery.

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