THE MODERATING EFFECT OF SCHOOL INFRASTRUCTURE ON THE RELATIONSHIP BETWEEN HUMAN RESOURCE MANAGEMENT PRACTICES AND ACADEMIC PERFORMANCE OF SECONDARY SCHOOLS IN MACHAKOS COUNTY, KENYA

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ABSTRACT

Organizations worldwide primarily exist to achieve specific goals. Academic performance trend in secondary schools in Machakos County has been declining in the recent past (2013-2019) hence the need for the study. The aim of the study was to establish whether school infrastructure moderated the relationship between human resource management practices and academic performance of these schools. The resource based theory informed this study. The study employed mixed methods research design. The target population was the 413 secondary schools in Machakos County. The school principals were selected as units of observation. Purposive sampling was used to select six secondary schools from where the key informants in this study were drawn. This consisted of the two national, top two performing and bottom two non performing secondary schools in Machakos County. The rest of the schools were selected using stratified sampling based on the category of school where a sample size of 201 was yielded. The study used primary data that was collected using self-administered semi-structured questionnaires and interview schedules. Qualitative data collected was analysed using content analysis while for the quantitative data, descriptive analysis and inferential analysis were carried out. The study found that school infrastructure significantly moderated the relationship between human resource management practices and the academic performance of these schools where it strengthened the influence that these practices had on the academic performance of the schools. Thus, the study concluded that when the different infrastructural priority areas for the schools were addressed, it was likely that the effectiveness of different human resource management practices in yielding better academic performance in these schools would be enhanced. The study recommends that the Ministry of Education should design frameworks and offer in kind assistance required by secondary schools to set up efficient safety and security systems in schools and also champion for more budgetary allocations from the government in order to increase funding required for infrastructural development in public schools. For private schools, the study recommends that the government should enforce policies that compel these schools to have the requisite basic school infrastructure required by students to adequately prepare for their examinations.

Keywords: Academic performance, School infrastructure, Human resource management practices, Safety and security systems, Budgetary allocations.

INTRODUCTION

Human resource management practices are key components of performance in almost all organizations. In any organization, the employees must be treated as a valuable asset. The organization mission will be achieved in a better way if the skills of the workers are developed. In the present competitive environment, the success of any organization depends on the caliber of their human resources and their programmes (Rehman, 2011).

In the contemporary business world, human resource represents the most important resource and each organization strives to achieve a competitive advantage and improve organizational performance relative to competitors (Rawashdeh & Al-Adwan, 2012). Human resource management practices refer to organizational activities directed at managing the pool of human resources and ensuring that the resources are employed towards the fulfillment of organizational goals (Tiwari & Saxena, 2012). Effective HRM practices have the potential to create organizations that are more intelligent and flexible than their competitors through the use of policies and practices that focus on hiring, developing talented staff and synergizing their contribution within the resource bundle of the organization (Armstrong, 2010).

Human resource management practices are central to the improvement of the quality of services offered by organizations. Wheelen and Hunger (2013) note that employees as human resources are the most important resources within an organization that help in achieving a competitive advantage. Human resource management practices are important pillars in building and maintaining trust in employees for they shape the employment relationship between the employee and the employer (Khaled, 2011). They are aimed at improving the overall performance of employees within the organization, ultimately resulting in increased organizational performance.

Human resource management practices have changed dramatically during the last two decades owing to globalization, privatization or deregulation, competition and technological advancements. The highly turbulent environment has forced organizations to adopt new workplace practices that lead to sustained levels of high performance (Ray & Ray, 2011). As firms enter into a more dynamic world of international business, and as the globalization of world markets continues at a fast pace, human resource management issues appear to be gaining momentum (Namusonge, Gathungu, & Iravo 2015).

When employees are managed effectively through consistent practices, they are able to act flexibly in pursuit of the organization excellence. Wachira (2010) observes that worldwide, human resources have to be managed effectively if they are to generate value from other resources. HR practices and performances have been studied and applied widely in different parts of the world. In the United States, McDonald (2017) recommends the use of training programs in field operations and franchising staff to improve service delivery. He recommends hands-on training programs to run successful organizations for the future.

In Britain, Bryson (2018) observes that schools that register improved academic performance have intense use of HRM practices, recruitment and proper training. The two are correlated with substantial improvement in schools' academic performance and workplace. In India, Pahuja and Dalal (2012) notes that in banking industry, the successful use of five key human resource practices, recruitment, reward system, training and skill development practices and effective communication leads to performance of banking industry in the emerging economy.

In Malaysia, Faizuddin (2018) observes that where best HRM practices among head teachers of public and private schools have been put in place, there is attainment of institutional and educational goals. The implication is that proper support and professional training of teachers is necessary in national and private schools. When this is done institutions and schools will

realize best performance. He recommends that the head teachers should have authority to practice and manage human resources in schools.

In Pakistan, Hassan (2016) from studies done in a textile industry observes that HRM practices: compensation, career planning, performance appraisal, training and employee involvement have a positive impact on employees' performance. These practices can also be used to turn around production in other organizations.

Africa as a region is a developing economy witnessing development and transformation in many aspects. In order to sustain the positive change, each country requires an innovative transformational and development-oriented public service at regional, national, local and community level. Mutahaba (2010) observes that the public service manning the innovation must be competent and capable human resource managers. In Nigeria, Oaya and Grace (2017) observe that recruitment and selection strategy in the manufacturing companies have an influence on organizational efficiency hence performance. They recommend that organizations can make use of employment agencies to recruit the best manpower. This is because committed and active employees willing to be mentored and monitored enhance performance.

In Zimbabwe, Nyaoni (2017) observes that student academic performance in rural secondary schools is influenced by a conducive work environment, training and development and dedication to work. Among other practices recruitment process, proper placement of teachers in schools, regular performance evaluation has positive influence on students' academic performance. These studies indeed confirmed that HRM practices do have a bearing on the performance of organizations and schools. The goal of each organization should be to detect, develop and utilize the skills and potentials of all the people in the organization.

In Kenya, scanty literature is available on human resource management practices. Kabera (2012) established that human resource management practices in Kenya are perceived as a measure of promoting managerial knowledge among the employees so as to make them more responsible and capable to run the business. In most cases, organizations especially the NGOs have taken measures to introduce several employees to their direct business as an attempt of making them aware of what is needed at the top levels so as to minimize changes in the managerial strategies.

Organizations strive for sustainability, sustainability and continuity on one hand, which are paramount; on the other hand, HRM practices are essential and seen as the total package in relation to the quality and quantity of the workforce in organization (Richards, 2011). The Government of Kenya aims to achieve and sustain an annual economic growth rate of 10% for it to realize the Kenya Vision 2030 (Government of Kenya, 2007). Organizations have to formulate and implement sound practices, including HRMP that would make them to not only attract, but retain, motivate, sustain and make optimum use of a workforce that can make them build a sound human resource base. It should be noted that the firms listed on the NSE compete for the same customers, more so for those listed in the same categories.

The Government of Kenya through Ministry of Education has invested heavily on resources in improving access and quality of education. This is in line with national goals of education, Education for All, Vision 2030 and Sustainable Development goals agenda. Through ensuring that each learner after completion of primary education access secondary schools irrespective of their status, location or even religion, the government decided to increase the number of national public secondary schools across the country in the year 2011 (Republic of Kenya, 2012).

The Government of Kenya master plan argues that in order to enhance quality education provision in secondary schools, it is imperative to have a well-qualified and highly motivated teaching force capable of understanding the needs of learners and the curriculum (Republic of Kenya, 2012). Every educational system at every level depends heavily on the human resources for execution of its programme. Nwaka and Ofojebe (2010) stated that teachers are the critical resources for effective implementation and realization of the educational policies and objectives at the practical level of classroom.

Studies done in Kenya by Kiiru (2013); Kilika et al. (2016); Gitonga, Kilika, and Obere (2016); Thiriku and Were (2016) indicate that strategic human resource management can result to a number of benefits to modern organizations that range from: the ability of the organization to achieve its goals with minimal resistance, employee support of business strategies, it enhances organizational competitiveness, it promotes creativity and innovation among workers, it promotes top management support of plans formulated and enhances cooperation among workers and departmental synergies. This has promoted a corporate culture that enhances ethical practices and good citizen behavior. Several academicians have attempted to study and understand why some organizations succeed while others fail (Iravo, Ongori, &Munene, 2013; Mugambi, 2017; Sagwa, 2015).

Studies done in Kenya have confirmed that indeed HR management practices can improve performance in organizations. Omuya, Kwashira and Kanali (2017) did a study on HR in Professionalism Act (2017) on employee's performance in Kenyan universities. The study concludes that employee performance is influenced by proper adherence to HRMP guidelines, mainly recruitment and selection. This suggests that where HR Management practices are in place organizations will post good performance.

The Concept of Academic Performance

Academic performance is a threshold assessment used to measure a student's ability to meet performance criteria. Grades are used to measure learning or knowledge and attainment of learning objectives and acquisition of skills and competencies (York, 2015). Academic performance of a student is regarded as the observable and measurable behavior in a particular situation (Komba, Hizza, & Jonathan, 2013).

Educational institutions are mandated to use education as a tool for social transformation and the quality of a school is measured by the quality of students it produces through academic performance (Biama, 2010). The measure of academic performance can also be used to assess the teachers' effectiveness. Good schools are those that are able to groom the students

well enough to achieve the set standards. This is measured by use of students' academic performance both at school level and nationally (Molokomphale, 2015).

Education outcomes are measured through examinations which have been accepted as an important aspect of the educational system. In Kenya, the Kenya Certificate of Secondary Education (KCSE) examination administered by the Kenya National Examinations Council (KNEC) measures student performance. It is used as the main basis for judging a student's ability and also as a means of selection for educational advancement and employment (Kieti, 2017). The education system in Kenya places a minimum grade C+ which students must obtain before they are admitted to public and private universities (Kigotho, 2012). Those who fail in the KCSE examination are most likely to join the high number of unemployed youngsters who look for informal jobs in a country that has few of them (Matiangi, 2017).

In the Kenyan context, education is considered a basic need and academic performance is positioned quite high on the national agenda with educators and policy makers putting effort in testing, accountability and other related concerns (Kaimenyi, 2013). Further, the Kenya education arrangement is dominated by examination oriented training, where passing examinations is the only standard for performance since there is no internal structure of monitoring learning achievements (Maiyo, 2009). Academic performance is used to grade schools and most importantly to determine one's career path. The 'good schools' are acclaimed to be those that are able to groom the students well enough to achieve the set standards (Kaimenyi, 2013).

Secondary Schools in Kenya

In Kenya, there are 8892 public secondary schools, 1350 private secondary schools (Economic Survey, 2017). The public secondary schools are further categorized as National schools, extra county secondary schools, County secondary schools and sub-county secondary schools. In Machakos County there are 413 secondary schools: three 331 Public schools and 81 private schools which offer the Kenya Certificate Secondary Examination. Among the public schools, there are two (2) National schools, 18 extra county schools, 43 county schools and 207 sub-county schools and 81 private schools (NEMIS, 2018).

Public secondary schools are managed by principals who are appointed by the Teachers Service Commission (Musera, Achoka, & Mugasia, 2012). The principals are expected to improve professionalism and address the issue of capacity building. They play a key role in the achievement of goals and objectives of a school. The principals are required to undertake a one year Kenya Education Management Institute Diploma in Education Management course, for effective management and good governance of schools (Hossain & Musembi, 2012).

The human resource management of public schools is the function of the Teachers Service Commission (TSC). TSC is a corporate body that was established in 1967 by an Act of Parliament. It is charged with the responsibility for managing teachers in primary schools, secondary schools and tertiary institutions. It is mandated to perform the following core functions: teacher registration, recruitment and deployment, remuneration, discipline, and

maintenance of teaching standards in Kenya. Besides these policies, the TSC has also delocalized some of the HR functions to the counties thus bringing them closer to teachers (Manthi, Kilika & Kimencu, 2018).

According to Schuler and Jackson (2007), management of human resources affects the performance of schools. HRM practices employed in public schools including training and development, management style, performance management and reward and compensation, contribute to the performance of teachers in such schools. Private schools are run and funded by private organizations or commercial companies or by individuals and also faith based organizations (World Bank Report, 2018). They range from low-income to high-income schools; expensive (for-profit) to least expensive (not-for-profit) private schools; and from well performing to not so well performing (Wekesa, 2012). Private schools represent an "exit option" from public systems for more advantaged parents. They also exacerbate socioeconomic stratification (OECD, 2012).

Some few private schools in Kenya continually post high mean scores for example, Moi High school in Nakuru 11.12, Strathmore in Nairobi 11.23, Lukenya Boys in Machakos, 9.32 while majority post weak mean scores (KNEC online). In most private schools the Human Resource management of the schools is left to the proprietor and the principal. This means that management of private education institutions is dependent on the ownership structure (Kenya Private Schools Association, 2017).

Kassa and Singh (2016) argue that secondary schools differ markedly in terms of human resource management practices which could be expected to contribute to the performance gap in the national examinations. It therefore seems important to ask whether good human resource management practices as recognized in studies of organizational performance both in secondary schools and elsewhere could be applicable in secondary schools in Machakos County and if applying such practices could improve academic performance.

The Government of Kenya has made efforts to put in place HRM practices in public secondary schools; procurement of teaching staff, training and development, compensation and safety. The Government spends close to KSh. 415.3 billion annualy in the education sector, secondary schools included (Kenya National Bureau of Statistics Economic Survey, 2018). However, there seems to be a challenge in the way human resource management practices are put in place in respective schools as reflected in the academic performance in majority of the secondary schools in Machakos County.

Infrastructure in schools which include adequate classrooms, equipped laboratories, halls, libraries, games equipment and sanitation facilities is seen as an important component of good academic performance (Mokaya, 2013). Academic achievement improves with improved building conditions and quality of most infrastructure in schools (Hussain, 2014). Well-equipped classrooms with better physical facilities have a significant positive effect on the academic achievement on scores of secondary school students. It is assumed that students in schools with better infrastructure are comfortable and produce better results in examinations. Hussain (2014) further points out students from schools with quality

infrastructure feel comfortable and have concentration on the lesson learning and obtain high scores.

Secondary Schools in Machakos County

Statistics of KCSE analysis in the last six years, indicate that majority of the secondary schools in Machakos County registered a mean score below that of the other schools of similar categories in other counties. Schools in other counties of the same category post results with a higher index, for example in the national category, Friends school Kamusinga in Bungoma County in the year 2017 posted a mean of index 10.28, while Machakos School posted an index of 7.8.

In the year 2017 Alliance Girls, a national school in Kiambu posted a mean score of 9.52 while Kathiani girls of similar category posted a mean of 5.81. Machakos Girls, an extra county school posted a mean index of 7.09 while Muthale Girls in Kitui posted an index of 9.65. Kyeni Girls an extra county school in Embu posted a mean of 8.6 while Muthetheni Girls of similar category posted a mean of 6.8. In the year 2015 Vyulya Girls an Extra county school posted an index mean 6.5 while Nguviu Girls in Embu posted a mean index 7.4

One of the objectives of secondary education in Kenya is to prepare students to make a positive contribution to the development of society and to acquire attitudes of national patriotism, self-respect, self-reliance and self-discipline (National Economic Security Program 2013/2018). Secondary education provides the skills and tools to help meet a country's growing demands for highly skilled and educated workers in a globalized world (Amini, 2015). Schools like other organizations need to achieve their desired goals/objectives. One of the tools of measuring academic success are performance in examinations (York, Gibson, & Rankin, 2015).

Kenya Certificate of secondary Education (KCSE) examination is taken at the end of the fourth year of secondary education. Learners who perform well are perceived to have received high quality education essential for sustainable socio-economic development and poverty eradication as opposed to those who perform poorly (Biama, 2015). The results on academic performance of secondary schools in Machakos County for the period of study shows that only a few students attained grade C+ and above. Few schools also attained a mean of index 5 and above out of the expected highest mean of index 12 for the period 2013-2018.The county mean for the same period has been below 5 out of the expected 12 and constantly on the decline. This is shown in Table 1.

Table 1: KCSE Performances in 2013 -2019 in Machakos County

YEAR	TOTAL	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	MEAN
2019	27222	2	117	374	788	1198	1572	2274	3105	3810	5698	4930	863	3.744
2018	23856	4	53	210	531	906	1319	1751	2658	3641	5542	6158	1224	3.11
2017	23479	0	34	144	353	642	905	1414	2133	3252	5212	7620	1733	3.112
2016	21662	0	81	270	522	799	1163	1581	2144	3046	4515	6176	1365	3.29
2015	20891	12	153	437	763	1283	1808	2409	3133	3531	4118	2921	317	3.725
2014	19152	28	169	442	799	1151	1653	2179	2966	3356	3651	2470	284	4.799
2013	18416	18	171	728	998	257	1868	2381	2801	3392	2387	338	404	4.567

Source: Machakos County Director of Education Office (2020)

Despite the increasing number of candidates registered for KCSE each year, the results show a decline in quality grades and an increase in weak grades especially from 2013 to 2017. The results also show an increasing number of weak grades each year. The overall mean of the entire county has been below 5 out of the expected 12 for the period under study, and on a constant declining trend. This is of great concern to stakeholders. The percentage of candidates scoring grade C+ and above in the county has been very low. For instance, 2013 it was 27%; 2014-22.7%; 2015- 21.35%; 2016- 13.8%; 2017- 8.83% ; 2018 -12.68% and 2019-14.88%.

According to the Kenya Universities and Colleges Central Placement Service (KUCCPS, 2015) students who attain grade C+ and above qualify for a degree course in Kenya. The percentages demonstrate low academic performance. Candidates who score grade A get admission to prestigious courses like medicine, law and engineering. From the statistics, very few or none manage admission into these courses, for example, in the year 2016 and 2017 there was no student who scored A grade in the entire county. In the year 2018 only 4 students scored grade A,while in 2019 only 2 students scored grade A in the county. The years 2016 to 2018 had the highest wastage number of grades with majority of the students scoring grades D to E. Students who attain grade C- are admitted for Diploma courses. Majority of the candidates who score grade D- and below end up being wasted. These are the majority among the candidates.

The performance in KCSE in Machakos county therefore implies that majority of the students cannot be admitted for the competitive degree courses. In Kenya the ministry of Education observes that education is a means for developing and enhancing the human resources that the country needs in order to achieve industrial and technological advancement (Ministry of Education, 2015). The results therefore imply that very few candidates from Machakos County fit in the top cadre. The long term implication is shortage of quality manpower nationally and in the county.

Statistics of KCSE analysis in the last six years, indicate that majority of the secondary schools in Machakos County registered a mean score below that of the other schools of similar categories in other counties. Schools in other counties of the same category post results with a higher index, for example in the national category, Friends School Kamusinga in Bungoma County in the year 2017 posted a mean of index 10.28, while Machakos School posted an index of 7.8. In the year 2017 Alliance Girls, a national school in Kiambu posted a mean score of 9.52 while Kathiani girls of similar category posted a mean of 5.81. Machakos Girls, an extra county school posted a mean index of 7.09 while Muthale Girls in Kitui posted an index of 9.65. Kyeni Girls an extra county school in Embu posted a mean of 8.6 while Muthetheni Girls of similar category posted a mean of 6.8. In the year 2015 Vyulya Girls an Extra county school posted an index mean 6.5 while Nguviu Girls in Embu posted a mean index 7.4.

The performance in KCSE examination of secondary schools in Machakos County is therefore not sufficiently competitive, given that one aim of effective schools is to produce excellent grades by many students in examinations (Kirby, Hutchings, & Francis, 2016). The implication of the results is that many schools in the county perform poorly and a good

percentage of the candidates do not attain the minimum C+ grade for direct entry into public and Private universities and are not able to get admission into premier courses.

Statement of the Problem

York, Gibson and Rankin (2015) observe that one of the tools of measuring academic success is performance in examinations. Machakos County has consistently recorded a mean score of less than 5 points and below out of the expected best mean score of 12 points for the last 6 years (2013-2018) in KCSE. Despite the high number of registered candidates, the number of candidates scoring grade C+ and above in the county has been on a declining trend as shown in Table 1. Statistics of KCSE analysis in the last six years, indicate that majority of the secondary schools in Machakos County registered a mean below that of the other schools of similar categories in other counties. Schools in other counties of the same category post results with a higher index.

A number of factors could be attributed to declining performance trends, among them teacher management, lack of basic infrastructural facilities, lack of motivation, lack of supervision, indiscipline of students or lack of human resource management practices which are key to good performance (K'Obonyo, Busienei, & Ogutu, 2013). Many studies have been done on some of the factors that affect performance of secondary schools. Studies by Oladebinu (2016), Kyei and Nemarani (2014), Oledebinu (2016) and Kormla (2012) addressed other areas like geographical factors, socioeconomic factors, and lack of resource materials, housing type and leadership practices and not the influence of HRM practices in secondary schools. Studies by Kepha (2014), Sang (2015) and Mutiso (2013) though conducted in different contexts, demonstrated that there was a link between human resource management practices and performance.

Karue and Amukowa (2013) addressed the concepts of entry behavior, home environment, Parent Teachers Associations and narrowed down on day secondary schools in Embu County. They did not address human resource practices. Ndinza (2015) focused on head teachers' management practices on students' academic performance in public secondary schools within Kitui Central Sub County. The context of the study was narrow and addressed different concepts of supervision, communication and motivation. Based on the declining trends of performance of secondary schools in the Machakos County, there was a justifiable need for a study to examine the influence of human resource management practices on academic performance, and if putting in place such practices would improve academic performance. This study examined the influence of human resource management practices,school infrastructure and academic performance of secondary schools in Machakos County, Kenya.

Research Hypothesis

H_0: School infrastructure has no significant moderating effect on the relationship between human resource management practices and academic performance of secondary schools of in Machakos County.

Theoretical Review

The paper is based on the Resource Based Theory. Barney's (2007) resource-based view (RBV) theory observes that a company must have valuable, rare, inimitable and non-substitutable resources to have a sustainable competitive advantage, and that these resources include everything internal to the firm. Barney (2007) listed all of the assets, capabilities, organizational processes, firm attributes, information and knowledge as resources. Wright and McMahan (1992) further explain what people, as resources, must have for the company to be competitive. They must give value to the organization's production processes; they must have rare skills to promote significant performance. The human capital investment must not be easily imitated. A company's human resources must not be substituted or replaced by technological alternatives. The high levels of automation in many industries and the continuing shift towards a service economy have made substitution less likely (Armstrong, 2010).

The theory argues that good human resource management practices lead to good functioning of internal organization which eventually becomes the source of creativity, innovation and successful performance of organization (Ahteela &Vanhala, 2011). Thus, the practices should be considered as a strategic issue within the learning institution. The policies, systems and practices influencing attitude, behavior and performance of employees compose the HRM practices (Noe, Hollenbeck, Gerhart, & Wright, 2007). Porter (2008) observes that the resource-based theory has been an imperative step in human resource management since it has given a new point of view to explain a firm's success. According to the focus on resources, an institution's success is due to joint resources and capabilities which an organization owns and makes it different from its competitors.

Among such resources and capabilities are the human resources and the crucial attributes of knowledge, skill, and talent. These resources and capabilities may constitute a source of competitive advantage (Hesketh & Fleetwood, 2008). From this point of view, the HRM practices in an organization are geared towards strengthening those significant capabilities and knowledge. Secondary schools are not exceptional and this calls for resource mobilization towards improved performance.

Wright and McMahan (2001) show the relation between strategy, HRM practices and human resource capital pool. They observe that if resources are strategic for the firm, it implies that they are scarce, valuable, specific or difficult to transfer. This is possible if the organization implements HRM practices such as recruitment of essential employees, compensating them conveniently, training them or to develop new capabilities and motivate them through incentives. Consequently, the HRM practices are likely to affect the performance.

The resource-based view of the organization gives a new perspective to human resource management. The organization creates and implements new measures in areas such as recruitment and selection, training and career development, compensation among others (Grant, 2002). An organization will usually train its employees in order to increase productivity for this reason, an organization will only train employees in those abilities and skills that are crucial to making tasks better and faster (Grant, 2002). As far as compensation

is concerned, the focus is compensating individual performance and the value created by an employee. The resource-based theory has thus made it possible to mark the importance of human resources for an enterprise because it is able to create competitive advantages.

Capabilities are another key concept within resource-based theory. Resources refer to what an organization owns, capabilities refer to what the organization can do (Mullins 2005). Capabilities tend to arise over time as a firm takes actions that build on its strategic resources. They are important in part because they are about how organizations capture the potential value that resources offer. Capabilities are needed to bundle, to manage, and otherwise to exploit resources in a manner that provides maximum productivity.

Overall, the resource-based theory provides a useful basis for understanding the value that HRM adds to the performance of the organization. Human resource management (HRM) practices have been widely researched and accepted as playing an instrumental role in creating and sustaining organizational performance (Hesketh & Fleetwood, 2008). It is argued that the resource-based view of the firm (RBV) on human resource management generates sustainable competitive advantage through recruiting, developing and retaining exceptional human talent (Steinkellner, Czerny, & Lueger, 2010).

The resource-based theory is relevant to this study because the theory emphasized on the importance of developing and enhancing the resources that are distinctive for a competitive advantage (Perce & Robinson, 2007). It relates to this study in that teachers who form part of human resources should be properly recruited and selected, trained and developed, properly remunerated and work in a healthy and safe place with the proper physical infrastructure for better performance. If this is done the academic performance is expected to improve.

RESEARCH METHODOLOGY

Research Philosophy

This study was anchored on the pragmatic paradigm. This paradigm arose among philosophers who argued that it was not possible to access the 'truth' about the real world solely by virtue of a single scientific method as advocated by the positivist paradigm, nor was it possible to determine social reality as constructed under the interpretivist paradigm (Morgan, 2014b). For them, a mono-paradigmatic orientation of research was not good enough. Rather, these philosophers such as Alise and Teddlie (2010) and Biesta (2010) argued that what was needed was a worldview which would provide methods of research that are seen to be most appropriate for studying the phenomenon at hand.

A worldview providing the most practical, appropriate and pluralistic research methods for studying the phenomenon at hand was thus needed (Morgan, 2014a). This gave rise to a paradigm that employs mixed methods as a pragmatic way (pragmatic paradigm) to understand participants' actual behaviors, their beliefs behind the behaviors and the consequences that are likely to follow from their different behaviors (Kivunja & Kuyini, 2017). This paradigm generally advocates a relational epistemology (that is, relationships in research are best determined by what the researcher deems appropriate to that particular study), a non-singular reality ontology (that there is no single reality and all individuals have

their own and unique interpretations of reality), a mixed methods methodology (a combination of quantitative and qualitative research methods), and a value-laden axiology (conducting research that benefits people) (Nguyen, 2019).

Agoi (2017) used this approach to study the influence of human resource management practices on employee satisfaction in public sugar manufacturing firms in kenya.Kyalo (2018) used mixed methods in a study on human resource management practices and tutor turnover intentions in public primary teacher collages in Nairobi metropolitan region in Kenya. This paradigm was best suited for this study since the phenomenon of human resource management practices adopted in secondary schools in Machakos County and their influence on the academic performance of schools was assessed using a mixed methods methodology where both qualitative and quantitative research methods were used. The study was expected to benefit several stakeholders in the education sector, who by implementing the suggested recommendations would adopt measures to enhance the efficiency in the adoption of these HRM practices for enhanced academic performance.

Research Design

This study employed a mixed methods research design. Normally, this research design applied both the qualitative and quantitative methods at the same time in the research process where both methods are equally prioritized, but kept separately when analyzing data (Creswell, 2014). However, the results from both approaches are merged in the overall interpretation stage. Thus, by using this research approach, diverse kinds of information comprising of qualitative views of the respondents on the study subject and quantitative scores which yield complementary results were obtained. This ensured that a comprehensive study on the influence of human resource management practices on academic performance of secondary schools in Machakos County, Kenya was conducted and that the research problem was better examined.

Caruth (2013) argues that no single design exists in isolation and combining different designs in one study increases validity of the findings. Hence, by employing this research design, the validity of the findings obtained in this study was enhanced. This was realized by being able to maximize on the strengths and minimize on the weaknesses of the quantitative and qualitative approaches to research. The quantitative approach in this case hinged on the descriptive study approach which facilitated the determination of the what, where and how of the study phenomenon and also assisted in the description of the phenomenon in its current state along the lines of Cooper and Schindler (2011). Amadi and Ezeugo (2019) used mixed methods to examine physical infrastructure availabilities and the academic performance of students in the Universal Basic education Scheme, Rivers state.Nigeria. Omisore and Okofu (2018) used mixed research methods to study the link between staff recruitment and selection process in the Nigerian public service.

Therefore, the descriptive study design facilitated the description of HRM practices adopted in secondary schools in Machakos County and how they had affected the level of academic performance among these schools. This way, a true picture of HRM practices and academic performance of secondary schools in this county and how they were related was painted. The

use of a qualitative approach helped in making sure that the study problem was not assessed through a single lens, but rather, diverse lenses which assisted in ensuring that the multiple facets of the study phenomenon were revealed and understood.

Target Population

A population is the total entire group of individuals, events or objects having a common observable characteristic (Mugenda & Mugenda 2003). In other words, population is the aggregate of all that conforms to a given specification. All items in the field of enquiry constitute a 'universe' or 'population' (Kothari, 2008). It is further described as the accessible population from where the study sample is drawn and upon which the study findings are generalized. The target population of this study was all the 413 secondary schools in Machakos County which offered KCSE. The schools consisted of 2 national secondary schools, 30 extra county secondary schools, 93 county secondary schools, 207 sub-county secondary schools and 81 private secondary schools. The principals of these schools were the respondents. The number of targeted secondary schools in each category are outlined in Table 2.

Table 2: Target Population

School Category	Target Population
Naitonal schools	2
Extra county	30
County	93
Sub-county	207
Private	81
Total	**413**

Source: Machakos Education County Office, 2019 (GOK, 2019)

Sampling Procedure and Sample Size

Sampling is the process of selecting a sub-set of cases in order to draw conclusions about the entire set (Orodho, 2005). The size of a study sample is determined by factors like the degree of confidence attached to the study results, the total population size, and how the population is varied in terms of the characteristics to be studied (Bhalerao, 2010). A sample is a small part of large population, which is thought to be representative of the larger population. Any statements made about the sample should be true for the entire population (Kothari, 2004).

In this study, the key informants were drawn from six secondary schools namely the two national, top two performing and bottom two non performing secondary schools in Machakos County. Accordingly, purposive sampling technique was used to sample these schools. Sarantakos (1998) points out that in purposive sampling, researchers purposely choose subjects who in their opinion, are thought to have relevant information in the research topic. The Yamane's formula (1989) was then used to determine the sample size for the remaining secondary schools which were considered in the survey as follows;

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

Where N is the target population

n is the desired sample size

δ is the critical value of the confidence level (0.05)

Using the formula and a target population (N) of 407, a sample size of 201 secondary schools were drawn for the survey. Stratified random sampling was then used to select secondary schools from each stratum. This ensured that there was representation from each category of the population (Mugenda & Mugenda, 2008). Stratified sampling also ensured a desired representation from each stratum. It also gave the researcher confidence that if another sample of the same size was selected the findings from the two samples would be similar to a high degree. The samples from each of the four categories of schools were determined as follows;

Sampled secondary schools per category (n) = (number of secondary schools per category/total number of secondary schools) *201(sample size)

Extra county schools; n= (30/407) *201 =15
County schools; n= (93/407) *201 = 46
Sub-county schools; n= (207/407) *201 = 102
Private schools; n= (77/407) *201 = 38

The number of secondary schools selected for the survey from each stratum are given in Table 3.

Table 3: Sample Size

School Category	Target Population	Proportion	Sample Size
Extra county	30	7.3	15
County	93	22.9	46
Sub-county	207	50.9	102
Private	77	18.9	38
Total	**407**	**100.0**	**201**

Source: Machakos Education County Office, 2019 (GOK, 2019)

Data Collection Instruments

A research instrument is a tool used to collect data (Saunders, Lewis, & Thornhill, 2007). A structured questionnaire and interview schedule were used to collect information from the respondents. Questionnaires were used because they were economical to administer in terms of time and cost to a large number of respondents. They ensured anonymity hence respondents could respond genuinely without fear of identification. Finally, the questions were on paper and were standardized hence no opportunity for the researcher to be biased (Kothari, 2004).

Questionnaires with both open ended and closed ended questions were used to collect quantitative data. The open ended question gave the respondents a leeway to give their honest views while closed ended questionnaires were used to generate statistics in quantitative research and for ease of tabulation and analysis (Borg & Gall, 2009). The questionnaire consisted a section on demographic information of the respondents and a set of items to measure the influence of human resource management practices and infrastructure on academic performance of secondary schools in Machakos County. The key areas of the

questionnaires were recruitment of teaching staff, training and development of teaching staff, compensation of teaching staff and safety of teaching staff as the independent variables, school infrastructure as the moderating variable and academic performance as the dependent variable.

A five - point Likert Scale with choices ranging from strongly disagree to strongly agree was used to measure the perceived role of the human resource management practices on academic performance of secondary schools in Machakos County. The Likert Scale was used because it is relatively easy to construct, it facilitates quantification of the responses, enabled ranking of items thus tendencies could be identified as the respondents were more likely to respond to all the statements in the instrument and could best help capture people's opinions (Kothari & Garg, 2014). An oral interview schedule was used to gather qualitative data form the key informants. Interviews help in collecting in-depth explanations which may not be possible to get from the questionnaire. Interviews allow the interviewer to probe the respondents and get clarification and more details in the area of study (Kasomo, 2006).

Data Collection Procedures

Approval from the university to conduct the study and clearance to conduct research from the National Council of Science Technology and innovation (NACOSTI) was sought. Once the approval was granted, visits to the selected secondary schools were done and authority was sought to administer the questionnaires and collect data. The questionnaires were dropped and picked later. This ensured a higher response rate and reduced non-coverage error since respondents had time to express their views and opinions since they were all literate (Borg & Gall, 2009). Time was fixed on when to collect the duly-filled questionnaires. This gave the respondents adequate time to respond. Follow-up courtesy calls were made to remind the respondents to fill in the questionnaires thereby increasing the response rate. Three research assistants were contracted to assist in administering the questionnaires. Interviews were administered to the sampled respondents personally by the researcher.

Data Analysis and Presentation

Data analysis is the categorizing, manipulating and summarizing of data in order to obtain answers to research questions (Kothari, 2006). Inferential analysis was undertaken where inferential statistics computed were used to make conclusions and generalizations about the schools based on data collected from the sample. Pearson correlation coefficients were used to assess the nature of the association or correlation between HRM practices, school infrustructure and academic performance of secondary schools in Machakos County. The strength, direction and significance of the associations between these variables was determined. Kasomo (2006) notes that Pearson correlation coefficient is the most popular measure of correlation for descriptive studies. It is most commonly used in linear regression and is a measure of the strength of the association between two variables.

The computation of a correlation coefficient yields a statistic that ranges from -1 to 1. The correlation coefficient informs one about the magnitude and direction of the association between two variables and the higher the coefficient the stronger the association between the

two variables. If the correlation is (+), it means there is a positive relationship between the two and vice versa. The significance of the correlation was assessed at the 95% confidence level or the 0.05 significance level (probability value). The rule of the thumb was that a calculated p value less than the critical p value of 0.05 for this study implied that the correlation between the variables was significant and vice versa.

A multiple regression analysis was conducted to show the combined influence of the four human resource management practices on the academic performance of secondary schools in Machakos County. The significance of the regression coefficients (beta coefficients) computed was determined by checking the associated p value. This was crucial in testing the research hypotheses.

The moderating effect of school infrastructure on the relationship between human resource management practices and academic performance of secondary schools in Machakos County was tested using stepwise regression analysis. The first step involved testing the influence of the composite of human resource management practices on the academic performance of secondary schools in Machakos County. This composite value was determined by undertaking an overall mean score of all the individual mean of responses for all the HRM practices.

$$Y= \beta_0 + \beta_1 X + Ɛ \quad \text{…… (model specified for under Step 1)}$$

In the second step, the influence of predictor variables (composite of HRM practices and school I nfrastructure) on the dependent variable (academic performance of secondary schools in Machakos County) was tested.

$$Y= \beta_0 + \beta_1 X + \beta_2 M + Ɛ \quad \text{…… (model specified under Step 2)}$$

In the third step, an interaction term (computed as the product of standardized values for composite of HRM practices and school infrastructure) was introduced and its influence on the academic performance of the schools tested.

$$Y= \beta_0 + \beta_1 X + \beta_2 M + \beta_3 X*M + Ɛ \quad \text{…… (model specified under Step 3)}$$

Where;
Y is the Academic performance of secondary schools in Machakos County
X is Composite for all the independent variables (HRM Practices)
M = School infrastructure (Moderating Variable)
X*M = Moderator multiplied by the composite for all the independent variables (Interaction)
Ɛ= Error term

Moderation was established if the influence of the composite of HRM practices, school infrastructure and interaction term on the academic performance of the secondary schools in the third step was significant. The main software used in analyzing the quantitative data was the statistical package for social sciences (SPSS). The findings were presented using charts and tables.

RESEARCH FINDINGS AND DISCUSSIONS

Correlation Analysis

Correlation analysis was conducted to determine the nature of association between recruitment and selection of teaching staff, staff training and development, staff compensation, staff safety and school infrastructure and the academic performance of secondary schools in Machakos County, Kenya. Pearson correlation coefficients which ranges from -1 to 1 were computed in this case. The strength, direction and significance of the correlation/association between the variables was assessed. The strength of the Pearson's correlation coefficients is interpreted using the criteria provided by Sedgwick (2012) as follows: +/-.00 to +/-.19 is very weak, +/- .20 to +/-.39 is weak, +/-.40 to +/-.59 is moderate, +/-.60 to +/-.79 is strong while +/-.80 to +/-1.0 is very strong. The significance of the correlation was assessed at the 95% confidence level or the 0.05 significance level (probability value). The rule of the thumb was that a calculated p value less than the critical p value of 0.05 for this study implied that the correlation between the variables was significant and vice versa. The results are given in Table 4.

Table 4: Correlation Matrix

		Academic Performance	Recruitment and Selection of Teaching Staff	Staff Training and Development	Staff Compensation	Staff Safety	School Infrastructure
Academic Performance	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	151					
Recruitment and Selection of Teaching Staff	Pearson Correlation	.748**	1				
	Sig. (2-tailed)	0.000					
	N	151	151				
Staff Training and Development	Pearson Correlation	.771**	.624**	1			
	Sig. (2-tailed)	0.000	0.000				
	N	151	151	151			
Staff Compensation	Pearson Correlation	.797**	.591**	.530**	1		
	Sig. (2-tailed)	0.000	0.000	0.000			
	N	151	151	151	151		
Staff Safety	Pearson Correlation	.727**	.618**	.689**	.571**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	151	151	151	151	151	
School Infrastructure	Pearson Correlation	.729**	.520**	.618**	.574**	.532**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	151	151	151	151	151	151

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

The findings as presented in Table 4 show that there was a strong, positive and significant correlation between the academic performance of secondary schools in Machakos County and the recruitment and selection of teaching staff (r=0.748, p=0.000). Teaching staff training

and development and the academic performance of secondary schools in Machakos County were also positively and significantly correlated (r=0.771, p=0.000). The association between the two variables was strong. The study also found that teaching staff compensation and academic performance of secondary schools in Machakos County were positively and significantly correlated and that their association was strong as (r=0.797, p=0.000).

A strong positive and significant correlation also existed between teaching staff safety and the academic performance of the sampled secondary schools (r=0.727, p=0.000). The results further demonstrated that school infrastructure and academic performance of secondary schools in Machakos County were positively and significantly correlated as supported by (r=0.729, p=0.000). The correlation between the two variables was also found to be strong. It can therefore, be inferred that the recruitment and selection of teaching staff, staff training and development, staff compensation, staff safety and school infrastructure and the academic performance of secondary schools in Machakos County changed in the same direction.

The above findings support the argument by Khaled (2011) that HRM practices were aimed at improving the overall performance of employees which ultimately resulted to increased organizational performance. The findings also agreed with the views of Namusonge, Gathungu, and Iravo (2015) that when employees were managed effectively through consistent practices, they were able to act flexibly in pursuit of organizational excellence. The findings further supported that of Bryson (2018) who found that HRM practices were correlated with substantial improvement in schools' academic performance and workplace.

Regression Analysis and Hypothesis Testing

The objective of the study was to establish the moderating effect of school infrastructure on the relationship between human resource management practices and academic performance of secondary schools in Machakos County. The following null hypothesis was specified as follows;

> **H_0**: School Infrastructure has no significant moderating effect on the relationship between HRM Practices and academic performance of secondary schools in Machakos County.

A multiple linear regression analysis was first conducted determine the joint influence of human resource management practices under study on the academic performance of secondary schools in Machakos County. The mean of responses on academic performance for all the principals were regressed against the mean of responses on the four HRM practices under study namely recruitment and selection of teaching staff, teaching staff training and development, teaching staff compensation and teaching staff safety so that the combined effect of these HRM practices on the academic performance of the sampled schools could be quantified.

Model Summary

The findings are presented in Table 5 showed that the HRM practices under study explained a significant proportion of the changes in the academic performance of the secondary schools in Machakos County. This is demonstrated by the R square of 0.843 which meant that 84.3%

of the variation in the academic performance of secondary schools in Machakos Count were attributed to changes in the recruitment and selection of teaching staff, staff training and development, staff compensation and staff safety in these schools. The rest of the variation in the academic performance of these schools, 15.7%, was explained by other factors not considered in this study.

Goodness of Fit

The results outlined in the second output in Table 5 showed that the overall model used to the human resource management practices under study and the academic performance of secondary schools in Machakos County was statistically significant given $F(1, 149) = 195.769$, $p = .000$, $p<0.05$). The results also suggested that the independent variables namely recruitment and selection of teaching staff, staff training and development, staff compensation and staff safety were adequate predictors of the academic performance of these secondary schools.

Regression Coefficients

The regression estimates as provided in the third output in Table 5 revealed that recruitment and selection of teaching staff had a positive significant influence on the academic performance of secondary schools in Machakos County given ($\beta = 0.191$, $t = 4.616$, $p = .000$, $p<0.05$). When all other factors were held constant, a unit increase in recruitment and selection of teaching staff would result to increased academic performance of these schools by 0.191 units. The findings also indicated that teaching staff training and development positively and significantly influenced the academic performance of secondary schools in Machakos County as demonstrated by ($\beta = 0.338$, $t = 6.644$, $p = .000$, $p<0.05$). Holding all other factors constant, increased teaching staff training and development would lead to increased academic performance of secondary schools in Machakos County by 0.338 units.

Equally, teaching staff compensation was found to positively and significantly influence the academic performance of secondary schools in Machakos County as supported by ($\beta = 0.439$, $t = 9.806$, $p = .000$, $p<0.05$). A unit increase in teaching staff compensation would therefore lead to increased academic performance of these schools by 0.439 units when all other factors were held constant. The study further established that teaching staff safety positively and significantly influenced the academic performance of secondary schools in Machakos County as shown by ($\beta = 0.129$, $t = 2.613$, $p = .010$, $p<0.05$). Increasing the level of teaching staff safety by one unit would therefore, result to increased academic performance of these schools by 0.129 units when all other factors are held constant. The optimal multiple linear regression model fitted before moderation is as shown below;

$$\mathbf{Y= -0.711+0.191\ X_1 + 0.338\ X_2 + 0.439\ X_3 + 0.129\ X_4}$$

Where Y= Academic Performance of Secondary Schools in Machakos County, X1 = Recruitment and selection of teaching staff, X2 = Teaching staff training and development, X3 = Teaching staff compensation, X4 = Teaching staff safety

Table 5: Joint Influence of HRM Practices on Academic Performance before Moderation

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.918a	0.843	0.839	0.443945
a Predictors: (Constant), Teaching staff safety, Teaching staff compensation, Recruitment and selection of teaching staff, Teaching staff training and development				

ANOVAa						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	154.335	4	38.584	195.769	.000b
	Residual	28.775	146	0.197		
	Total	183.109	150			
a Dependent Variable: Academic Performance						
b Predictors: (Constant), Teaching staff safety, Teaching staff compensation, Recruitment and selection of teaching staff, Teaching staff training and development						

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-0.711	0.117		-6.066	0.000
	Recruitment and selection of teaching staff	0.191	0.041	0.216	4.616	0.000
	Teaching staff training and development	0.338	0.051	0.323	6.644	0.000
	Teaching staff compensation	0.439	0.045	0.424	9.806	0.000
	Teaching staff safety	0.129	0.050	0.129	2.613	0.010
a Dependent Variable: Academic Performance						

A moderating variable affects the strength and/or direction of the relationship existing between the independent and dependent variables. It can enhance, reduce or change the impact of the independent variable. The moderating effect is tested in terms of how the effect of the independent variable on dependent variable changes when a moderator is introduced. The moderating effect was tested using stepwise regression analysis proposed by Baron and Kenny (1986). The first step involved testing the influence of the composite of human resource management practices on the academic performance of secondary schools in Machakos County. In the second step, the influence of predictor variables (composite of HRM practices and school infrastructure) on the dependent variable (academic performance of secondary schools in Machakos County) was tested. In the third step, an interaction term (computed as the product of standardized values for composite of HRM practices and school infrastructure) was introduced and its influence on the academic performance of the schools tested. Moderation is established if the influence of the composite of HRM practices, school

infrastructure and interaction term on the academic performance of the secondary schools in the third step is significant.

The regression results in Table 6 are explained in this section. In step one; academic performance was regressed against the composite of HRM practices. The results indicate that the composite of HRM practices accounted for 82.1% of the variance in the academic performance of secondary schools in Machakos County given (R Square=0.821). The overall model was significant (F= 682.577, p= .000, p< 0.05). The beta coefficient of 1.066 and associated p value of 0.000 implies that a unit change in the composite of HRM practices is associated with 1.066 changes in the academic performance of the schools. The results in the first step were all significant.

The moderator, school infrastructure was added in step two. The introduction of the moderator, significantly improved the influence of human resource management practices on the performance of secondary schools in Machakos County from 82.1% to 84.9%. Human resource practices and school infrastructure together explained 84.9% of the variance in the academic performance of the schools as demonstrated by R Square=0.849. The overall model was statistically significant (F= 416.217, p=0.000, p<0.05). Similarly, the beta coefficient for school infrastructure (β=0.263) was statistically significant given p=0.000.

In step 3, the interaction term was introduced in the regression model. All the variables, the composite of human resource management practices, school infrastructure and the interaction term (composite of HRM practices*school infrastructure) were entered in the regression model. The results reveal that R Square improved from 0.849 in step two to 0.873 in step three. The overall model in step three yielded results that indicate that the interaction was statistically significant (β=0.176, p=0.000, p<0.05). This meant that school infrastructure moderated the relationship between human resource management practices and the academic performance of secondary schools in Machakos County. The coefficient of interaction was positive (0.176) which implied that changes in school infrastructure strengthened the relationship between HRM practices and the academic performance of secondary schools in Machakos County.

Table 6: Stepwise Regression Results showing the on the Moderating Effect of School Infrastructure on the Relationship between HRM Practices and Academic Performance

Model Summary						
Model		**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	
1	HRM practices	.906a	0.821	0.820	0.46925	
2	HRM practices and School Infrastructure	.921a	0.849	0.847	0.432162	
3	HRM practices, School Infrastructure the Interaction term	.935a	0.873	0.871	0.397202	
Analysis of Variance						
Model			**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	HRM practices	Regression	150.3	1	150.3	682.577	.000b

		Residual	32.809	149	0.22		
		Total	183.109	150			
2	HRM practices and School Infrastructure	Regression	155.468	2	77.734	416.217	.000b
		Residual	27.641	148	0.187		
		Total	183.109	150			
3	HRM practices, School Infrastructure the Interaction term	Regression	159.917	3	53.306	337.87	.000b
		Residual	23.192	147	0.158		
		Total	183.109	150			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.636	0.121		-5.242	0.000
	HRM practices	1.066	0.041	0.906	26.126	0.000
2	(Constant)	-0.856	0.119		-7.174	0.000
	HRM practices	0.889	0.050	0.756	17.652	0.000
	School Infrastructure	0.263	0.050	0.225	5.260	0.000
3	(Constant)	0.507	0.279		1.816	0.071
	HRM practices	0.358	0.110	0.304	3.246	0.001
	School Infrastructure	0.222	0.102	0.190	2.169	0.032
	Interaction term	0.176	0.033	0.807	5.310	0.000

Model 1 Predictor (Constant) HRM practices
Model 2 Predictors: (Constant) HRM practices and School Infrastructure
Model 3 Predictors: (Constant) HRM practices, School Infrastructure and Interaction term.
Dependent Variable: Academic performance of secondary schools in Machakos County

Figure 1 contains the path diagram illustrating the moderation effect of school infrastructure following the stepwise regression analysis conducted. The figure illustrates step 3 of the stepwise regression where the composite of human resource management practices, school infrastructure as a moderator and the interaction term (composite of HRM practices*school infrastructure) were entered in the regression model. The first arrow shows the beta coefficient (0.358) associated with the composite of HRM practices, under the second arrow, the beta coefficient (0.222) corresponding to school infrastructure as the moderating variable is given while under the third arrow, the beta coefficient (0.176) associated with the interaction term (composite of HRM practices*school infrastructure) is given.

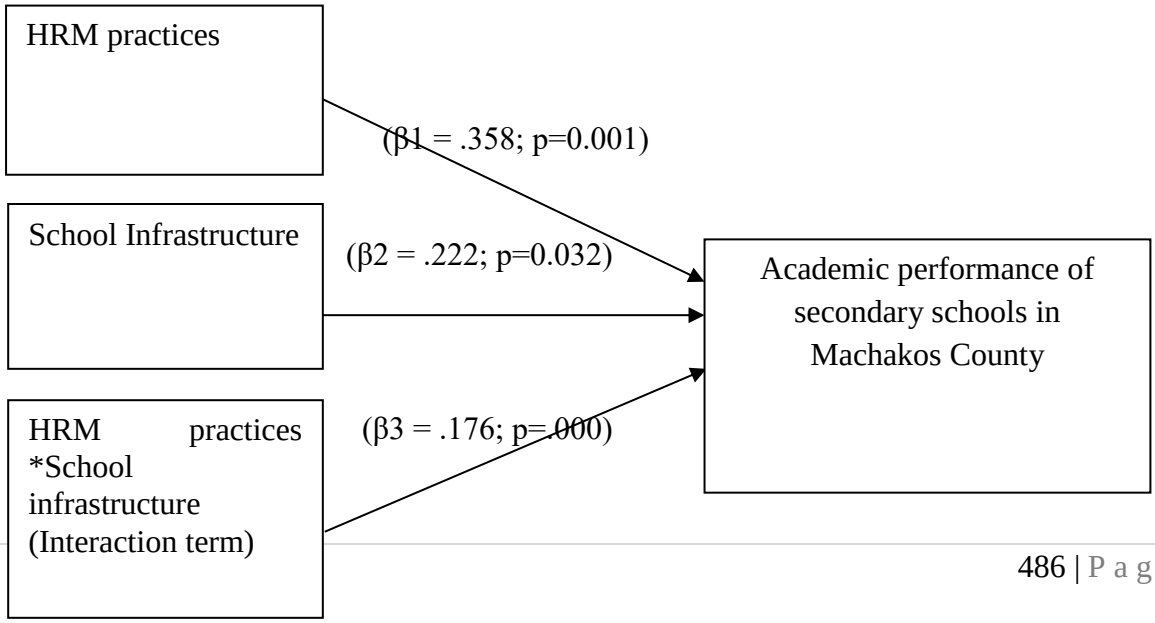

Figure 1: Moderation Path Diagram for the Effect of School Infrastructure on the Relationship Between HRM Practices and the Academic Performance

Based on the stepwise regression analysis, the substituted regression equation for estimating the moderating effect of school infrastructure on the relationship between human resource management practices and academic performance of secondary schools in Machakos County is as follows:

Step I

$$Y= -0.636 + 1.066X$$

Where **Y**= Academic performance of secondary schools in Machakos County, **X**= Composite of human resource management practices

Step II

$$Y= -0.856 + 0.889X + 0.263M$$

Where **Y**= Academic performance of secondary schools in Machakos County, **X**= Composite of human resource management practices, **M**= School infrastructure (moderator)

Step III

$$Y= 0.507 + 0.358X + 0.222M + 0.176\ X*M$$

Where **Y**= Academic performance of secondary schools in Machakos County, **X**= Composite of human resource management practices, **M**= School infrastructure (moderator), **X*M** = Interaction term

Following the findings in Table 6, the null hypothesis was rejected and a conclusion made that the relationship between human resource management practices and the academic performance of secondary schools in Machakos County was significantly moderated by school infrastructure. These findings agreed with that of Olufunke and Olubunmi (2016) that a significant relationship existed between physical facilities, human and material resources and academic performance in schools. The findings also supported the findings by Uko (2015) that effectively managed school facilities were necessary in creating an enabling conducive teaching environment which was accompanied by enhanced student academic achievements.

CONCLUSIONS

The study concluded that the basic school infrastructure in most of the secondary schools in Machakos County was inadequate,especially in the subcounty and county secondary schools and hence, the infrastructural needs of the schools were diverse. The study further concluded that school infrastructure enhanced the influence that human resource management practices had on the academic performance of secondary schools in Machakos County. Hence, when the different infrastructural priority areas for the schools were addressed, it was likely that the effectiveness of different human resource management practices in yielding better academic performance in these schools would be realised. Human resources are one of the most critical elements for performance.

The role of HRM is generally seen in ensuring that organisations are able to recruit and select, train and develop, compensate and ensure safety for their employees. In this study the influence of teaching staff recruitment and selection, trainning and developmet, compensatation and safety on academic performance in secondary schools in Machakos County was investigated. From the findings it was concluded that these practices play a significant role in accademic performance of these secondary schools as evidenced by the positive beta cofficients from the regression analysis conducted.

RECOMMENDATIONS

Regarding school infrastructure, the study recommends that the owners of private schools should continuously invest in developing the required facilities in their schools. For the public schools, the study recommends for prudent use of funds allocated by the government in developing the required school infrastructure. The schools can also seek for financial assistance from donors, the community and also leaders at local levels in order to meet some of the infrastructural needs.

The study recommends Ministry of Education should champion for more budgetary allocations from the government in order to increase funding required for infrastructural development within schools. The ministry in its budgetary plans should aim to make sure that schools at all levels have the basic infrastructure such as science laboratories that are a necessity when students are preparing for examinations. For private schools, the government should enforce policies that compel these schools to have the requisite basic school infrastructure required by students to adequately prepare for their examinations.

Studies that take in to account other intervening variables, discipline of the students, leadership qualities of principals, sponsorship of the schools where the sponsors are concerned about facilities can also be considered. This study was limited to secondary schools in Machakos County. Similar studies can be replicated in other counties where majority of the schools across all categories post quality results like Kiambu, Nyeri and Makueni for comparative purposes.

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