

**INFLUENCE OF PRINCIPALS' PREPAREDNESS ON ADOPTION OF DIGITAL
TEACHER PERFORMANCE APPRAISAL TOOL IN PUBLIC SECONDARY
SCHOOLS IN KIAMBU COUNTY**

BY

ROSE KATUNGE MUEMA

18/05700

**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF
EDUCATION (ADMINSTRATION & MANAGEMENT) IN THE SCHOOL OF
EDUCATION ARTS & SOCIAL SCIENCES AT KCA UNIVERSITY**

NOVEMBER, 2022

DECLARATION

Student

I declare that this dissertation is my original work and has not been presented in any other university/institution for consideration of any certification.

Signature:_____

Date:_____

Rose Katunge Muema

Reg. No: 18/05700

Department of Educational Administration

Supervisors

This thesis has been submitted for appraisal with my approval as a University supervisor.

Signature:_____

Date:_____

Dr. Priscilla Gachigi

Department of Educational Administration

KCA University

Signature:_____

Date:_____

Dr. Jackson Ndung'u Mwangi

Department of Educational Administration

KCA University

ACKNOWLEDGMENT

I humbly acknowledge the immense contribution of my supervisors for their advice and tireless efforts during my research. I express my gratitude for their time, comments, suggestions, and efforts in evaluating my work. Also, am grateful to KCA University for allowing me to pursue my studies. Above all, glory and honour to God who blessed the entire course.

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGMENT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
DEFINITION OF KEY TERMS	x
ACRONYMS AND ABBREVIATIONS	xi
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Study.....	1
1.3 Statement of the Problem.....	8
1.4 Purpose of the Study	9
1.5 Objectives of the Study	9
1.6 Research Questions.....	10
1.7 Significance of the Study	10
1.8 Assumptions of the Study	11
1.9 Limitations of the Study.....	11
1.10 Scope of the Study	12
CHAPTER TWO	13
LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Theoretical Framework: Unified Theory of Acceptance and Use of Technology	13
2.3 Literature Review	15

2.3.1 Principals Training and Adoption of the Digital Performance Appraisal Tools	16
2.3.2 ICT Resources and the Adoption of Digital Performance Appraisal.....	20
2.3.3 Principals Perceptions and the Adoption of Digital Performance Appraisal	25
2.4 Summary and Knowledge Gaps	29
2.5 Conceptual Framework.....	31
2.6 Operationalization of Variables.....	33
CHAPTER THREE	36
RESEARCH METHODOLOGY	36
3.1 Introduction	36
3.2 Research Design	36
3.3 Target Population	37
3.4 Sampling Procedure and Sampling Size	38
3.4.1 Sample Size.....	38
3.4.2 Sampling Techniques	40
3.5 Research Instruments.....	40
3.5.1 Pilot Study.....	40
3.5.2 Validity of the Research Instruments	41
3.5.3 Reliability of the Research Instruments.....	41
3.6 Data Collection Procedures.....	42
3.7 Data Analysis	42
3.8 Ethical Considerations	44
CHAPTER FOUR.....	45
DATA ANALYSIS, PRESENTATION AND INTERPRETATION.....	45
4.1 Introduction	45
4.2 Response Rate	45
4.3 Respondents Demographic Information	46

4.3.1 Respondents Gender.....	46
4.3.3 Age of the Respondents School Principals.....	46
4.3.4 Highest Level of Education Attained by the Respondents	47
4.3.5 Principals Work Experience	48
4.4 Principals Training and Adoption of the Digital Performance Appraisal Tools.....	49
4.4.1 Training of School Principals	50
4.4.2 Aspects of Principals Training.....	52
4.4.3 Principals Knowledge and Understanding of the TPAD Tool	53
4.4.4 Influence of Principals Training on Preparedness to adopt Online Teacher Appraisal	57
4.5 ICT Resources and the Adoption of Digital Performance Appraisal	59
4.5.1 Accessibility to ICT Resources.....	60
4.5.2 Influence of ICT Resources on the adoption of the TPAD Tool	61
4.5.3 Access to Laptops/Desktops	63
4.5.4 Access to Reliable Source of Power.....	64
4.5.5 Access to Technical Support.....	65
4.5.6 Access to Reliable Internet	66
4.5.7 Access to the TPAD Portal	67
4.6 Principals Perceptions towards the Digital Teacher Performance Appraisal System ...	68
4.6.1 Efficiency of the TPAD System.....	69
4.6.2 Ease of Using the TPAD System to appraise Teachers.....	70
4.6.3 TPAD enhancement of Teacher Professional Development Provision.....	71
4.6.4 TPAD Enhancement of Job Promotions and Career Growth	73
4.7 Adoption of the Digital Teacher Performance Appraisal System	74
4.8 Correlation Analysis	76
4.9 Regression Analysis.....	78

4.9.1 Model Summary	78
4.9.2 Analysis of Variance	79
4.9.3 Co-Efficient of Correlation	79
CHAPTER FIVE	82
SUMMARY OF THE FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS	82
5.1 Introduction	82
5.2 Summary of the Findings	82
5.2.1 Influence of Principals Training on Adoption of the TPAD System	82
5.2.2 Influence of Provision of ICT Resources on Adoption of the TPAD System.....	83
5.2.3 Influence of Principals Perceptions on Adoption of the TPAD System	84
5.2.4 Adoption of the TPAD System in Public Secondary Schools in Kiambu County .	85
5.3 Conclusions of the Study	86
5.4 Recommendations of the Study	87
5.5 Recommendations for Further Research.....	87
REFERENCES.....	88
APPENDICES	91
APPENDIX I: TRANSMITTAL LETTER.....	91
APPENDIX II: PRINCIPALS' QUESTIONNAIRE.....	92
APPENDIX III: INTERVIEW SCHEDULE FOR COUNTY TSC DIRECTOR.....	98
APPENDIX IV: RESEARCH PERMIT	99

LIST OF TABLES

Table 2.1: Operational Definition of Variables	34
Table 3.1: Target Population	38
Table 3.2: Sample Size	39
Table 3.3: Reliability Statistics	42
Table 4.1: Response Return Rate	45
Table 4.2: Gender of the Respondents	46
Table 4.3: Age of the School Principals Respondents	47
Table 4.4: Highest Level of Education Attained by Respondents	48
Table 4.5: Respondents Work Experience	48
Table 4.6: Principals Training of the Online Teacher Appraisal	50
Table 4.7: Aspects of Principals Training	52
Table 4.8: Performance Competence Areas	54
Table 4.9: Teachers Rating Scale	56
Table 4.10: Influence of Principals Training on Adoption of Online Teacher Appraisal	57
Table 4.11: Accessibility to ICT Resources	60
Table 4.12: Influence of ICT Resources on the adoption of TPAD Tool	62
Table 4.13: Principals Perceptions towards the TPAD System	68
Table 4.14: Adoption of the Digital Teacher Performance Appraisal System	74
Table 4.15: Correlations Analysis	77
Table 4.16: Model Summary	78
Table 4.17: Analysis of Variance (ANOVAa)	79
Table 4.18: Coefficients of Correlation	80

LIST OF FIGURES

Figure 2.1: Conceptual Framework	32
--	----

DEFINITION OF KEY TERMS

Adoption- refers to the Utilization of the Digital Teacher Performance Appraisal and Development Tool in appraising secondary school teachers

Principals Perceptions- refers to beliefs and feelings that influence the attitude held by the school principals on the usefulness and efficiency of the Digital Teacher Performance Appraisal and Development Tool in appraising the performance of secondary school teachers.

ICT Resources- refers to the basic facilities, human resource and services required for the effective adoption and integration of the online Teacher Performance Appraisal in appraising the performance of secondary school teachers.

Performance Appraisal - refers to the procedures put in place to periodically assess the teacher competencies and performance and provide feedback with an aim of enhancing teachers' professional development and enhancement of the quality of education among secondary schools.

Principals Preparedness- refers to the readiness of school principals to use the Digital Teacher Performance Appraisal and Development Tool in appraising the performance of secondary school teachers.

Digital Teacher Performance Appraisal and Development Tool- refer to the online system that is used to evaluate performance of secondary school teachers.

ACRONYMS AND ABBREVIATIONS

ICT	Information Communication and Technology
MIS	Management Information Systems
NACOSTI	National Commission for Science, Technology and Innovation
OECD	Organization for Economic Cooperation and Development
SPSS	Statistical Packages for Social Sciences
TAM	Technology Acceptance Model
TPAD	Teacher Performance Appraisal and Development
TSC	Teachers Service Commission
UTAUT	Unified Theory of Acceptance and Use of Technology

ABSTRACT

This study assessed the influence of principals' preparedness on adoption of Digital Teacher Performance Appraisal Tool in public secondary schools in Kiambu County. The specific objectives of the study included: To evaluate the influence of principals training; provision of ICT resources and principals perceptions towards TPAD System on the adoption of the Digital Teacher Performance Appraisal System. The study was grounded on the Unified Theory of Acceptance and Use of Technology. The study adopted a descriptive research design using quantitative and qualitative approaches. Stratified and simple random sampling techniques were used to select a sample size of 164 principals from a target population of 278 principals in public secondary schools in Kiambu County. Purposive sampling was used to identify the TSC Sub County directors as key informants. Questionnaires were used to collect data from the principals while interview guides were conducted with TSC sub county directors. The SPSS software was used to conduct data analysis to generate descriptive statistics; correlation analysis; and regression analysis. Thematic analysis was used to identify emerging patterns and themes from the interview transcripts and presented in verbatim quotes and narrative form. Results of regression established that principal preparedness accounts for 65.9% variation in adoption of the digital teacher appraisal system. The Co-efficient of correlation established that principals training has a positive and significant effect on adoption of the TPAD System ($\beta_1= 0.720$; $p=0.000$); ICT resources have a positive and significant effect on Adoption of the TPAD system ($\beta_2= 0.812$; $p=0.000$); and principals perceptions have a positive and significant effect on Adoption of the TPAD system ($\beta_3= 0.690$; $p=0.000$). Results of the Pearson's Correlation Co-efficient established that principals preparedness increase the their readiness and willingness to adopt the TPAD system as there is a very strong positive correlation between: principals training and adoption of the TPAD system ($r=0.700$; $p\text{-value}=0.000$); ICT resources and adoption of the TPAD system ($r=0.597$; $p\text{-value}=0.000$); and principals perceptions and adoption of the TPAD system ($r=0.720$; $p\text{-value} =0.000$). This study found out that 92.9% of principals in public secondary schools in Kiambu County had undergone 3 day training on the digital teacher appraisal system to familiarize with the TPAD system prior to its adoption and utilization in appraising teachers. However due to the short period of training all the critical aspects were not adequately covered. As a result only 25% school principals were able to identify all of the seven performance competence areas used to evaluate teachers and indicate the appropriate rating scale. The study also found out that principals had access to all the ICT resources required to adopt the TPAD system; principals' perceptions towards the TPAD system influenced their preparedness in adopting TPAD system; and principals have successfully adopted the TPAD system in appraising teachers in public secondary schools in Kiambu County. However the principals' limited knowledge and understanding on the performance competence areas and the rating scale may adversely affect their ability to produce appraisal reports that accurately reflect the teacher's performance. Therefore this study recommends that TSC; organizes a second training that will comprehensively and extensively cover all the critical aspects required to equip the principals with skills on how to use the TPAD system; provides principals with training to enhance their level of ICT competency; provides feedback to the teachers; and provide training to teachers to enhance their skills and competence in areas identified as requiring improvement during the appraisal process.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the background to the study; the problem statement; objectives of the study; research questions; significance of the study; assumptions guiding the study; scope and limitation of the study and definition key terms.

1.2 Background of the Study

Teachers' performance appraisal is a process of evaluating teachers' performance efficiency with the main aim of ascertaining and addressing the gaps in their performance to improve the quality of education (Tumusiime *et al.*, 2021). It is a continuous process of evaluating teachers' performance against pre-determined teaching standards and providing appraisal feedback with the main aim of improving on areas of weakness. Performance appraisal periodically evaluates teaching practices, teaching competencies and teachers performance to make judgment on whether the teachers has achieved set standards and providing feedback with an aim of improving teachers practices for professional development and the quality of education. Teacher's performance appraisal has two key functions: the improvement function which seeks to improve teachers own practices by identifying strengths and weakness to enhance professional development; and the accountability function which seeks to ensure that teachers perform their duties optimally to enhance students learning (Teachers Service Commission of Kenya, 2021). These functions combine to enhance the quality of education in line with Sustainable Development Goal 4: Quality Education.

Online teacher performance appraisal systems provide timely, accurate and efficient way of assessing teachers performance by eliminating the cumbersome work of manual systems; generating timely, accurate and detailed appraisal reports; enhancing integrity and security of the appraisal data (Anido, 2021); providing timely feedback to teachers; and according teachers' opportunity to participate through self-appraisal and identify their professional strengths, performance gaps and areas of improvement (TSC, 2021). Therefore it is critical that schools are adequately prepared prior to the implementation of appraisal systems (Sayeeduddin & Vijayakumar, 2018).

Preparation has a significant bearing on the success of the appraisal system. Adequate preparation ensures that the necessary ICT resources required to implement the appraisal system are provided; ensures that the appraisers receive training to facilitate their understanding of the appraisal process and acquire skills on how to use the digital appraisal tool to conduct the assessment; ensures that the appraisers are equipped with the necessary ICT skills to improve their effectiveness in performing their duties. This ensures that schools are adequately prepared to use the system to assess teachers' performance and enhance the quality of education.

An evaluation of online teachers' performance evaluation systems in the Philippines by Anido (2021) has revealed that online appraisals is a more efficient way of assessing teachers however successful implementation requires adequate preparation in terms of building a technology-enhanced school environment. This requires that the school administration invests in the necessary ICT resources and teachers ICT skills to prepare them for integrating ICT in school operations and management. Anido (2021) observes that appraisers need to be adequately prepared to comprehend the online appraisal process and tools given any form of inaccuracy in the input assessment data inevitably affects the accuracy of the appraisal data used for

evaluation. Mutuku and Ogutu, (2018) observe that teachers ICT competence plays a significant role in their preparedness and willingness to adopt digital systems. Teachers who possess the necessary ICT skills are ready and more inclined to adopt the use of ICT for performance appraisal. However teachers with low level of pedagogical training in ICT may not be willing to embrace the integration of ICT in performance appraisal. Hence it is critical to ensure that appraisers have the requisite ICT skills to enhance their preparedness to adopt online appraisal systems.

Online teacher appraisal systems require numerous ICT resources hence schools must be adequately equipped with these resources to enhance their preparedness to implement the systems. Baosheng (2017) study of teachers' online appraisal systems in China has revealed that Chinese online appraisal system uses the ASP.NET program. The program builds a web-based application program for assessing teachers; has a net application for upgrades and security maintenance; and a data access layer that stores data and provides user with access to the data base interface (Baosheng, 2017). Such a complex system requires enormous ICT resources to maintain. It requires a technical ICT expert to address technical issues that may arise in the use of the system, conduct upgrades and security maintenance; a web host; continuous access to reliable internet connectivity; uninterruptible power supply and a secure facility for hosting the large capacity processing servers. To ensure successful adoption of the TPAD among school, principals need to ensure that their schools are equipped with all the necessary ICT resources required to adopt online appraisals.

Whilst the schools may not require all these ICT resources, to conduct the appraisals teachers and the school principals need to have access to a laptop or desktop with reliable internet connectivity and a source of power to effectively conduct the assessments. This enables

them to access the online appraisal portal where they create accounts, log in, conduct the appraisal and submit the reports. Anyonje (2015) observes that unreliable internet with low bandwidth; limited availability of desktops and laptops; and frequent power interruptions remain to be a major impediment to adoption of ICT systems in secondary schools. Therefore, it is critical that these ICT resources are provided to adequately prepare appraisers to use online systems to appraise teachers. Even though conducting appraisals using online systems may not require highly technical knowledge, it requires advances ICT skills in internet use, navigating the appraisal portal, web navigation skills, operation of data base and online filling of forms. Ghavifekr *et al.*, (2016) observes that an estimated more than 30% of teachers are computer illiterate which may significantly impair their ability to conduct online appraisals. Hence performance appraisers need to advance their digital skills in order to be able to effectively conduct online appraisals.

Teachers' attitude towards the appraisal system plays a significant role in their preparedness to use digital appraisal system. A Teaching and Learning International Survey on the Organization for Economic Cooperation and Development (OECD, 2019) has revealed that teachers attitude towards the appraisal system is dependent on their perception of usefulness of the appraisal system to their teaching practice. The study involving 90, 000 teachers across 24 countries revealed that teachers find the appraisal process to have a significant impact on their practice when it provided feedback. Performance feedback informs teachers about the extent to which they have met professional teachings standards, how they performed and the improvement needed. This helps teachers to identify and address teaching and professional gaps to meet expected results effectively enhancing teachers' performance and professional development. No matter how effective technology is, effective implementation of the technology largely depends

upon users' positive attitude toward it. Khatete and Macharia (2020) observes that a negative attitude towards the appraisal significantly compromise the quality of the appraisal process as teachers with a negative attitude fill the self-assessment mechanically to please the appraisers without reflecting on their actual performance.

Inadequate training or complete lack of training for performance appraisers has been a major impediment to the adequate preparation for implementation of appraisal systems across the world. An examination of school administrators' views on the teacher performance appraisal among school in Ontario Canada by Robert (2017) has revealed that school administrators charged with the responsibility of appraising teachers were not extensively trained on how to carry out the teacher appraisal exercise. As a result the school administrators did not have a comprehensive understanding of the appraisal system affecting their ability to conduct credible appraisal of teachers. According to the school administrators, the teacher appraisal did not make substantial contribution to teachers' performance in class. Oyaró (2016) argues that training of teachers on performance appraisal was critical to the success of the process as teachers who are well trained in performance appraisal tend to embrace online appraisals. Therefore, provision of a comprehensive training of a teacher appraisal system is critical in understanding of the appraisal process and tools to be used to appraise teachers.

Following the reformation of the teachers' appraisal system from the conventional classroom observation to a collaborative and democratic teacher appraisal approach, the Sultanate State of Oman Ministry of education initiated a variety of training workshops to enable appraisers adapt to the new appraisal policy (Ministry of Education, 2018). A study assessing the preparedness of performance appraisal supervisors from the Muscat Educational Supervision Directorate has revealed that while the training programmes covered supervisory roles and

practices under the new system, the training was mainly theoretical. As a result the appraisers approach to evaluation reflected the conventional approach despite having knowledge of the practices under the new (Al-Kiyumi & Hammad, 2020). Similar Challenges have been experienced in Ethiopia. Evaluation of perceived effectiveness of teachers' performance appraisal system by Mirado (2019) has revealed that teachers were not involved in the developing the appraisal criteria; and the school principals and teachers were not exposed to any form of training before the adoption of the system. Consequently teachers lost confidence in their appraisers and the appraisal system was not able to achieve its objective of enhancing the quality of education (Mirado, 2019).

Training of appraisers is a critical aspect of school preparedness in adoption of appraisal systems as teachers tend to question the credibility of the appraisal process when the appraisers appear not to be trained to undertake the appraisal (Oyaro, 2016). When the credibility of a performance assessor to appraise teachers is questioned by teachers under him/her, then the results of the appraisal process is also in doubt significantly affecting the effectiveness of the appraisal system. However, training of the appraisers enhances their understanding of the appraisal process and equips the appraisers for using the appraisal tool enhancing the quality of the appraisal process.

The Teacher Performance Appraisal and Development (TPAD) Online management system was rolled out in all public primary and secondary schools in Kenya in 2016 to enhance quality of the appraisal process and improve the standards and quality of education. The new system is a departure from the conventional principals' confidential appraisal systems which demotivated teachers due to lack of their involvement (Midimo, 2017) and the manual systems that had a high workload. Even though the TPAD system charges the school principals with the

oversight role of appraising teachers (TSC, 2018), the TPAD system is an interactive and participatory process in which teachers and their appraisers hold appraisal target setting meetings where they share an understanding of competency areas to be assessed, performance targets and deadlines as per the school TPAD calendar. Continuous self-assessment appraisal is undertaken through the term by the teacher based on achievement of TPAD targets and professional teaching standards. This provides accumulative evidence that will be used by their appraiser for rating them at the end of the term. Self-appraisal accords teachers opportunities to identify their professional strength, performance gaps and areas of improvement for professional development (TSC, 2021). However there is minimal evidence on the extent to which performance appraisers were prepared to adopt and implement the systems in appraising teachers in their respective schools.

Whereas some studies have shown the system reduced case of teachers absenteeism and improve lesson attendance (Owuor & Jonyo, 2017); enhanced teachers punctuality, enhanced teachers use of professional documents such as schemes of work, lesson plans, lesson observation records, timetables and progress records (TSC, 2021), other studies have revealed inherent weakness that may be a probable indication of lack of adequate preparation of appraisers. Khatete and Macharia (2020) established that appraisers did not provide feedback to teachers. Owuonda *et al.*, (2020) found out that majority (91.6%) of principals had a negative attitude towards the online appraisal system. Machio (2017) revealed that majority of public secondary school principals are ineffective in conducting teachers' appraisal resulting in appraisal reports not addressing teachers' needs. Oyaro (2016) found out that 85.7% of the principals indicated that teachers in their schools had not received adequate training on the teachers' performance appraisal and 56.7% of teachers indicated that they had not undergone

any training. Against this background, there was need to determine the extent which appraisers preparedness influenced adoption of the digital appraisal systems in schools.

1.3 Statement of the Problem

The TPAD system charges the school principals with the oversight role of appraising teachers (TSC, 2016) hence their preparation has a significant bearing on the success of the appraisal system. However evidence indicates that majority of the schools principals may not have adequately prepared for adoption of the TPAD system. A study by Oyaro (2016) found out that 85.7% of school principals had not received adequate training on the teachers' performance appraisal and 56.7% of teachers had not undergone any training. Gakime (2016) observes that majority of high school teachers have limited ICT skills that are critical to conducting the online evaluation of teachers. Owuonda *et al.*, (2020) found that 91.6% of principals' perceived teacher's performance appraisal as unnecessary wasteful of their time.

Further, Anyonje (2015), found out that the internet used by secondary schools is unreliable due to limited bandwidth and school experienced frequent power interruptions. Machio (2017) on the other hand found out that public secondary school principals are ineffective in appraising teachers. These challenges inevitably compromise the effectiveness of the appraisal process particularly among school principals who are responsible for overseeing the entire evaluation process.

Whilst the studies indicate inadequate preparation, there are gaps in knowledge which this study filled. A study by Oyaro (2016) revealed that principals were not adequately trained however he only examined the percentage/number of teachers/principals that had undergone training and did not examine whether the training had enhanced principals understanding of the

online appraisal system and how to use the system. Gakime (2016) demonstrated lack of preparedness among secondary schools due to limited ICT skills among teachers, however this study determine the extent to which ICT skills influenced teachers adoption of ICT in teaching while the current study examined influence of principals ICT skills on their preparedness to adopt the TPAD system. Whereas Owuonda *et al.*, (2020) revealed that principals had negative attitude towards teacher's performance appraisal, this study did examine how the negative attitude influenced teachers' preparedness to adopt the TPAD system. Anyonje (2015) revealed that secondary schools have unreliable internet and power supply however this study examined how ICT resources influenced integration of ICT in teaching while the current study examined the influence of ICT resources on the adoption of the TPAD system. This study filled these gaps by assessing preparedness of school principals to adopt the TPAD system in public secondary schools in Kiambu County.

1.4 Purpose of the Study

This study main objective was to assess the influence of Principals preparedness on adoption of Digital Teacher Performance Appraisal Tool in public secondary schools in Kiambu County.

1.5 Objectives of the Study

This study sought to achieve the following objectives:

- i. To evaluate the influence of Principals Training on the adoption of the Online Teacher Performance Appraisal System
- ii. To assess the influence of Provision of ICT Resources on the adoption of the Online Teacher Performance Appraisal System

- iii. To establish the influence of Principals Perceptions towards the adoption of the Online Teacher Performance Appraisal System

1.6 Research Questions

This study provided answers to the following questions:

- i. What is the influence of Principals Training on the adoption of the Online Teacher Performance Appraisal System?
- ii. What is the influence of Provision of ICT Resources on the adoption of the Online Teacher Performance Appraisal System?
- iii. What is the Principals Perceptions towards the adoption of the Online Teacher Performance Appraisal System?

1.7 Significance of the Study

A credible teacher appraisal system is central to improving the quality of education and enhancing teachers' professional development. Successful implementation of appraisal systems to a large extent is determined by the preparedness of the performance appraisers. This study assessed the extent to which principal's preparedness influenced adoption of the online teachers' appraisal system. The study may therefore be beneficial to future scholars through contribution of literature on the influence of school preparedness to adopt online appraisal systems and through recommendation of other areas for further studies.

This study may also be instrumental in assisting the Teachers Service Commission of Kenya in identifying gaps in its adoption of the TPAD in secondary schools in Kenya and subsequent implementation of suitable policy interventions aimed at enhancing successful

implementation of the online appraisal system. This will enhance TSC's efforts to enhance quality of the teaching process and teacher's professional development in line with its strategic plan. It may also enhance government efforts to realize SDG Goal 4 on quality education.

School principals and teachers may also benefit from the study through identification of best practices that are critical in preparation for implementation of online appraisal systems and recommendations which if implemented by TSC will enhance their effectiveness in conducting teachers' performance appraisals. Learners in secondary schools may also benefit from an effective teacher appraisal system that enhances quality.

1.8 Assumptions of the Study

This study was guided by the following assumptions: All the secondary schools in Kiambu County were using the TPAD online system to appraise teachers performance; TSC provided school principals with training on the online teacher performance appraisal system prior to its adoption; and principals were willing to give accurate information that reflects on their preparedness to adopt online appraisal systems.

1.9 Limitations of the Study

This study is bound by scope, time and resources. Being an expansive county, the researcher may not travel every corner of the county and hence the research used a representative sample of public schools in the sub counties were included in the final sample. As such findings of this study are only generalized to public secondary schools in Kiambu County.

This study relied on self-rating by the school principals and therefore some of the principals may want to portray they were adequately prepared to enhance their credibility in

conducting assessments especially to the TSC. Therefore, the researcher assured the principals that the study was not meant to assess their capacity to conduct online appraisals but rather findings were only used purely for academic purposes only; any information given was for university consumption only and anonymity of the principals was assured to curb the fear of victimization.

1.10 Scope of the Study

School preparedness to adopt online teachers' performance appraisal is influenced by numerous factors, however this study scope was limited to principals' preparedness. The study assessed three aspects of Principals Preparedness: Principals Training; Provision of ICT Resources; and Principals Perceptions towards online appraisal systems. The geographical scope of the study was Kiambu County. The study was conducted among principals of public secondary schools as the TPAD system charges the school principals with the oversight role of appraising teachers. The study assessed the extent to which the school principals were prepared to adopt the online teachers' appraisal system and how this influenced adoption of the system in their respective schools. The TSC sub county directors were also involved in the study as they are responsible for overseeing the process in the sub counties.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides the theoretical framework upon which this study was grounded; a review of the literature on based on the four aspects of principal's preparedness: Principals Training; Provision of ICT Resources; and Principals Perceptions towards online appraisal systems; and how they influence adoption of online Teachers Performance Appraisals. It also provides the knowledge gaps that this study sought to fill and the conceptual framework upon which the study was based.

2.2 Theoretical Framework: Unified Theory of Acceptance and Use of Technology

The unified theory of acceptance and use of technology was developed by Venkatesh, Morris, Davis and Davis (2003) to explain the extent of users' acceptance of the use of technology based on their assessment of the expected benefits. The extent to which users' accept the use technology is referred to as the behaviour intention. The intention to use technology is influenced by the users' attitude towards the technology. User's attitude is determined by their evaluation of the technology based on four main factors: performance expectancy; effort expectancy; social influence and facilitating conditions (Venkatesh *et al.*, 2003).

Performance expectancy refers to the extent to which the user believes that using ICT will be beneficial to their jobs. Users will be inclined to use technology if they perceive that it will enhance their job performance (Venkatesh *et al.*, 2003). Applies to this study, principals will be more inclined to adopt the Digital Teacher Performance Appraisal and Development tool if they perceive that using technology will enhance efficiency in appraising teachers. School

principals will be ready and inclined to adopt the online Teacher Performance Appraisal system if they expect the system will enhance their efficiency in conducting teacher's appraisals. This determines the attitude that the principals have towards the system. Positive perception that the system enhances principals' efficiency increases their readiness and willingness to adopt the system.

Effort Expectancy refers to the degree of ease associated with the use of the technology. Users will be more inclined to use the technology if they perceive it to be easy to use. Hence users are likely to use technology that does not require a lot of effort to use (Venkatesh *et al.*, 2003). Principals are inclined to utilize the Digital Teacher Performance Appraisal and Development Tool to appraise teachers if they perceive the system to be relatively easy to use in comparison to the previous system and if it requires less effort. If the principals lack ICT skills and skills of operating the appraisal system, they may perceive the system as difficult affecting their preparedness and consequently willingness to use the system for appraising teachers. Therefore, successful incorporation of the online system in appraising teachers requires training of principals to equip them with skills and knowledge in ICT and how to operate the Digital Teacher Performance Appraisal Tool.

Facilitating conditions refers to the extent to which the user perceives that there is organization and technical infrastructure to support the technology. Users will be inclined to use the technology if there is technical infrastructure to support it (Venkatesh *et al.*, 2003). Principals will be prepared to incorporate the Digital Teacher Performance Appraisal and Development Tool in appraising teachers if there are adequate ICT resources to support adoption of the online appraisal system.

Hence the principals need to ensure that their respective schools have all the necessary ICT resources for implanting the online performance appraisal. These include laptops, computers with a reliable internet, internet browsers for accessing the TPAD portal, power supply and well trained staff with technical skills in ICT or support from an ICT technician.

Social influence refers to the extent to which the user perceives that significant others believe that he/she should use the technology. Users will be inclined to accept and use the technology if the significant others think that the technology is beneficial or have a positive evaluation of the technology (Venkatesh *et al.*, 2003). Principals' readiness to incorporate Digital Teacher Performance Appraisal systems in appraising teachers may be as a result of social pressure from principals who have seen the benefits of the system during piloting may also increase social pressure on others to adopt the system. The pressure may also come out of the need to comply with the requirements of the TSC Policy to use the Digital Teacher Performance Appraisal system to appraise teachers. The Unified Theory of Acceptance and Use of Technology therefore provided the framework for assessing principals' preparedness to adopt online performance appraisal based on their evaluation of the technology in terms of ease of using the system as determined by principals training and ICT skills; Attitude based on perception of the efficiency of the systems and positive perceptions by peers; and facilitating conditions based on availability of necessary ICT resources.

2.3 Literature Review

The literature was reviewed based on the research objectives:

2.3.1 Principals Training and Adoption of the Digital Performance Appraisal Tools

The preparedness of schools in adopting the digital appraisal system is to a large extent dependent on the training of school principals on the Digital Teacher Performance Appraisal and Development Tool. Training of the appraisers enhances their understanding of the appraisal process including target setting; appraisal standards and the rating methods eliminating misunderstanding and the inconsistencies in the appraisal process. It also equips the appraisers with the skills on how to use the digital appraisal tool to conduct the assessment as required and provide feedback to the teachers being appraised (Mirado, 2019). This enhances the quality of the appraisal process and ensures that feedback is provide to the teachers to enable them to identify the extent to which evaluation standards have been met, how well they have performed and the improvement needed effectively enhancing the quality of the teaching.

The credibility of the appraisal process is often judged based on the credibility of the appraiser. Appraisers who are properly trained demonstrate high level of competence and understanding of the appraisal process and appear to be more credible to the person being appraised. As such their reports are usually perceived to be credible. On the contrary teachers tend to question the credibility of the appraisal process when the appraisers appear not to be trained to undertake the appraisal. Such appraisers have high levels of incompetence that put doubts on the credibility of appraisal process. When the credibility and work of a performance assessor to appraise teachers and or guide teachers under him/her looks questionable, then the results of the appraisal process is also in doubt (Mirado, 2019). Therefore to ensure that the appraiser is adequately prepared to use the digital appraisal tool, there is need to provide training to the appraiser before they begin using the system.

Studies have shown that lack of appraisers training significantly affects the credibility of the teacher appraisal system. An examination of school administrators' views on the teacher performance appraisal among school in Canada by Maharaj (2017) has revealed lack of preparation had a profound negative effect on the implementation of teachers' appraisal performance. The study which was conducted among 178 administrators of schools in Ontario, Canada using surveys found out that school administrator charged with the responsibility of appraising teachers, were not extensively trained on how to carry out the teacher appraisal exercise. As a result, the school administrators did not have a comprehensive understanding of the appraisal system. This affected their ability to conduct credible appraisal of teachers. Lack of a comprehensive training programme significantly affected the outcome of the appraisal as evidenced by the administrators' views. According to the school administrators, the teacher appraisal did not make substantial contribution to teachers' performance in class. Therefore, provision of a comprehensive training of a teacher appraisal system to the appraisers is critical in the successful implementation of the system among schools.

An evaluation of perceived effectiveness of teachers' performance appraisal system among 147 teachers and 11 principals by Mirado (2019) has revealed that public schools in Sidama Zone of Ethiopia were inadequately prepared to implement the result-oriented teacher appraisal system in the country resulting in a series of implementation challenges. The study used descriptive statistics and correlation analysis for analysing data collected through survey questionnaires, document analysis and interviews.

Findings of the study revealed that teachers were not involved in the developing the appraisal criteria; and the school principals and teachers were not exposed to any form of training before the adoption of the system. Consequently teachers lost confidence in their

appraisers and the appraisal system was not able to achieve its objective of enhancing the quality of education (Mirado, 2019).

Training of appraisers is a critical aspect of school preparedness in adoption of appraisal systems as teachers tend to question the credibility of the appraisal process when the appraisers appear not to be trained to undertake the appraisal. When the credibility of a performance assessor to appraise teachers is questioned by teachers under him/her, then the results of the appraisal process is also in doubt significantly affecting the effectiveness of the appraisal system. Similar challenges were observed in the implementation of the Sultanate State of Oman National Strategy for Education 2040 as a result of inadequate training. The Ministry of education reformed from the conventional classroom observation teacher appraisal to a collaborative and democratic teacher appraisal approach where teachers are involved in the appraisal. Consequently the ministry initiated a variety of training workshops and programs for the appraisers (Ministry of Education, 2018) revealed by a study by Al-Kiyumi and Hammad, (2020).

Al-Kiyumi and Hammad (2020) evaluated the preparedness of the performance appraisal supervisors using a sample of 25 regional supervisors and 19 teachers' supervisors. Thematic analysis was used to analyse data collected using semi-structured interviews. The study revealed that prior to their appointment; regional supervisors are required to have undertaken a Diploma or degree in educational supervision; teacher performance appraiser training was essential in ensuring adequate preparation of the supervisors for the proposed changes in teacher appraisal policy and in training of teachers to enable them to adapt to the new appraisal policy in their teaching practices. However majority of junior performance appraisers did not receive training compared to regional appraisers and the training was mainly theoretical. As a result the

appraisers approach to evaluation reflected the conventional approach despite having knowledge of the practices under the new appraisal system (Al-Kiyumi & Hammad, 2020). Whereas training of the performance appraiser is critical for preparation of adopting a new appraisal system, ineffective nature of training may affect preparation of the appraisers. Hence performance appraisers need to be adequately trained on proposed changes in appraising teachers.

The significance of training in preparation of schools to adopt appraisal systems is further emphasized by a study by Oyaro (2016). The study which was conducted among 127 teachers and 32 principals collected data using questionnaires and used descriptive statistics for analysis. Findings of the study revealed that majority of the teachers and principals felt that training of teachers on performance appraisal was critical to the success of teacher's appraisal. However majority of the teachers and principals indicated that they had not receives any form of training significantly affecting their ability to conduct assessment. Findings of the study revealed that 82.2 % of the school principals indicated that it was important that teachers are well grounded in performance appraisal as teacher who are well trained in performance appraisal tend to embrace it as indicated by 82.1% of the principals. The study also found out that 85.7% of the principals indicated that teachers in their respective schools had not received adequate training on the teachers' performance appraisal. Due to the inadequate training 67.9% of the principals indicated that teachers had developed a negative perception to performance appraisal. Whilst the 75% of the teachers felt that teachers needed to be trained on performance appraisal, over half of the teachers (56.7%) indicated that they had not undergone any training on the performance appraisal (Oyaro, 2016).

These studies have indicated that vast majority of teachers and principals had not undergone training prior to the adoption of appraisal systems in their respective schools. This may have significantly affected the quality of the appraisal process given that some of the appraisers preferred to use conventional approaches despite the adoption of new systems; it also dented the credibility of the appraisal process as the appraisers had limited understanding of how to conduct appraisals; and the appraisal did not make substantial contribution to enhancement of teachers' performance. Therefore it is critical that performance appraisers receive adequate training before implementation of teachers' appraisals. This ensures that they are adequately prepared to undertake the appraisals by having the requisite skills to conduct appraisals, an understanding of the appraisal process and the tools to be used to conduct the appraisal.

2.3.2 ICT Resources and the Adoption of Digital Performance Appraisal

Information and Communication Technology resources are central to the preparedness of schools to adopt Digital teacher appraisal tools. Anindya and Majumder, (2017) observe that in an effort to automate the performance appraisal, organizations are increasingly integrating ICT in appraising employees performance. Performance appraisal is one of the key human resources that can be automate however a computerized human resource information system consists of a comprehensive integrated of human resource related database, tools, and information services. There are various performance management software that are used in performance appraisal such as workforce performance management suites and talent management software. This software systematically records data on employee performance, pre-determined targets and the results achieved by the employees based on these targets. The information is stored in metrics where

employee performance is compared to standards, targets and feedback is generated enabling employees to determine their performance.

Therefore, successful implementation of an online teacher appraisal system requires performance appraisal software; access to a laptop or desktop with reliable internet connectivity and a source of power to effectively conduct the assessments. This enables them to access the online appraisal portal where they create accounts, log in, conduct the appraisal and submit the reports. Anindya and Majumder, (2017) investigation of the effectiveness of technology in appraisal observes that due to the critical role played by the appraisal systems it is critical that organizations have all the resources required to successfully implement the online appraisal systems. The study which was based on analysis of data from 20 published articles and journals revealed that having all the resources ensures that the system is able to collect accurate and reliable data that can be used for purposes of making important human resources decisions such as training needs, promotions, areas of improvement and the resources required to support employees to achieve set targets and standards. Therefore schools need to adequately prepare by having all the resources required to implement digital performance appraisals.

Connectivity to the internet plays a significant role in school preparedness to adopt digital or ICT based systems. A study by Anyonje (2015) investigated school preparedness to adoption of ICT in teaching using a sample of 102 secondary school and 483 participants in Bungoma County. Data was collected by use of interviews and questionnaires and analysed using descriptive statistics. The study found out that to effectively adopt use of online systems in performance of schools administrative and teaching functions, schools need to have access to reliable internet connectivity.

The study revealed that while majority of secondary schools accessed the internet using different modes of connectivity. However having connectivity majority of the schools did not have reliable internet connectivity as over half of the schools (54%) used mobile and cyber internet (Anyonje, 2015). Mobile phone internet has a lower bandwidth which may affect the speed leading to delays affecting ability of teachers to conduct performance appraisal within the set timelines. Teachers may also spend a significant proportion of their time conducting assessments reducing class time. On the other hand using the cyber internet exposes the appraisal data to possible security threats compromising the integrity of the appraisal data. Hence adequate preparations are required to ensure that schools have access to a secure and reliable internet.

The study by Anyonje (2015) further shows that connectivity to a source of power is a critical factor that influences school preparedness in integrating ICT in evaluation of teachers. The study found out that connection to a source of power was imperative in the integration of ICT in schools as most of the ICT resources use electricity or other forms of energy in order to operate. Through the rural electrification program majority of the secondary schools in Bungoma (79.4%) were connected to the electrical grid; 13.7% of the schools generators and 6.9% of the schools did not have any form of power supply. However power interruptions due to frequent power blackouts presented a major challenge to the schools (Anyonje, 2015). An online system requires a continuous supply of power therefore successful implantation of digital appraisal systems requires connection to uninterruptible source of power and if possible a backup power to minimize interruption and lose of data as a result of power blackouts.

A study evaluating online teachers' performance evaluation systems in the Philippines, by Anido (2021) established that successful integration of online systems in appraising teachers requires investment in ICT resources. The study conducted interviews with 45 faculty members

of the Far Eastern University in Manilla and analysed qualitatively using the thematic approach. Findings revealed that successful implementation of online appraisal systems require adequate preparation in terms of building a technology-enhanced school environment. This requires that the school administration invests in the necessary ICT resources for integrating ICT in school operations and management. Similar observations have been made by Baosheng (2017) who used a qualitative approach to assess the China online teacher appraisal system. The study which used observation and interviews to collect data from a sample of 30 ICT technicians operating the system revealed that China online appraisal system uses the ASP.NET program that builds the web-based application program for assessing teachers; has a net application for upgrades and security maintenance; and a data access layer that stores data and provides user with access to the data base interface (Baosheng, 2017). Such a complex appraisal system requires a technical ICT expert to address technical issues that may arise in the use of the system, conduct upgrades and security maintenance; a web host; continuous access to a reliable network; uninterruptible power supply and a secure facility for hosting the large capacity processing servers.

Implementation of online appraisal systems also requires technical support for purposes of security and maintenance of ICT systems and resources that are fundamental to the Digital Appraisal System/tool. However, an investigation into the integration of ICT in teaching among 113 teachers from 40 secondary schools in Machakos by Mutuku and Ogutu, (2018) has revealed that most teachers have basic ICT skills or completely lack ICT skills. The study analysed data collected through questionnaires using descriptive statistics. The study established that most teachers (70.2%) in public secondary schools are not in apposition to handle complex ICT tasks that are critical for maintaining the Digital appraisal tools. Further 40% of the teachers were willing to integrate ICT if they had access to ICT (Mutuku & Ogutu, 2018). Low level of ICT

competence among such teachers limits their ability to ensure the safety of appraisal data collected making it vulnerable to security threats; the teachers may not handle technical problems that arise while using the system; teachers may not be in a position to address crashing of the computers operating system; may not be able to install browser required to access the appraisal portal to operate the system; and teachers may not know how to update computer software. Therefore it is critical that teachers have access to technical support to enable them operate the digital appraisal systems with minimal or without any interruptions.

Studies have shown that technical support has a significant role in influencing teacher's preparedness to adopt and integrate digital systems in schools. Yilmaz, (2019) assessed technology integration in the Turkish education system using a sample of 144 teachers from the Black Sea Region. Descriptive and inferential statistics were used to analyse quantitative data and content analysis for qualitative data. The study established that 85.3% of the schools reported that access to technical support was instrumental in the successful integration of ICT in the education system. The study established that teachers were not willing to adopt use of digital platforms in performing their duties if they did not have access to technical support out of fear of technical failure which they could not handle. Lack of technical support in schools reduces technical maintenance increasing the probability and risk of technical breakdowns (Yilmaz, 2019). Teachers are ready and willing to adopt digital platforms in performing their duties when they have access to technical support (Mutuku & Ogutu, 2018). Therefore principals are likely to be prepared to adopt the Digital Appraisal system if they are provided with technical support from an ICT specialist.

Lack of technical support from ICT technicians has been linked to dysfunction of the ICT systems used in schools. A study evaluating the influence of provision of technical support on

the implementation of ICT in Kajiado North Sub County by Muriuki (2017) established that lack of technical support had significantly derailed the implementation of ICT among public schools in Kajiado North Sub County. The study was conducted among 70 teachers and 150 learners from 5 public schools. Data collected from questionnaires was analysed using descriptive statistics. Findings of the study showed that more than half of the respondents (55.4%) indicated that the school did not provide adequate technical support required for the implementation of ICT in the schools. As a result half of computers in the school had broken down and were no longer functional. The computers were idle as they could not be used by the teachers. The study found out that less than half of the teachers in the public schools had basic ICT skills which could not be applied in maintaining ICT resources hence lack of technical support may render the systems dysfunctional. Therefore provision of technical support is a critical component of the ICT resources required to implement the digital appraisal systems.

2.3.3 Principals Perceptions and the Adoption of Digital Performance Appraisal

Perceptions refer to beliefs and feelings that influence the perceptions held by the head teachers on the usefulness and efficiency of the Digital Teacher Performance Appraisal and Development Tool in appraising the performance of secondary school teachers. A positive attitude is required for preparation and willingness of teachers to adopt digital appraisal systems. No matter how advanced or effective technology is, effective implementation of the technology largely depends upon users' positive attitude toward it. Teachers tend to have positive perceptions towards performance appraisals if the appraisal contributes to their professional developments and facilitate job promotions as this improves their efficiency and enhance career growth. Teachers' positive perceptions towards performance appraisal are also influenced by their participation in

the design and implementation of performance appraisal systems. Involving teachers in the development of the teacher appraisal increases the probability of teachers feeling ownership of the appraisal process and being open to receiving feedback that will improve their service delivery. On the other hand teachers will have negative perceptions towards performance appraisal systems based on the perceived demerits accruing from the performance appraisal system. Such demerits may include fear of dismissal, demotion, loss of job and denial of transfer as a result of negative outcomes and frustration in conducting the assessment (Owuonda *et al.*, 2020).

Teachers' perceptions to a great extent determine the level of success in the implementation of teacher performance appraisal. However in most cases teachers' attitude towards the appraisal system is hardly taken into consideration prior to the implementation of the system. The implementing authorities hardly take time to ascertain how the teachers perceive performance appraisal system (Owuonda *et al.*, 2020). In most cases a negative opinion from teachers is always viewed as a fear that their incompetence will be revealed by the system. The TPAD appraisal system met strong opposition from teachers unions during the first term of the year but implemented during second term. As a result teachers fill the self-assessment mechanically to please the appraisers without reflecting on their actual performance.

According to the Unified Theory of Acceptance and Use of Technology, users attitude towards the adoption of technology in performance of their functions is influenced by two factors: Performance expectancy and Effort Expectancy. Performance expectancy refers to the extent to which the user believes that using ICT will be beneficial to their jobs. Users will be inclined to use technology if they perceive that it will enhance their job performance (Venkatesh *et al.*, 2003). Teacher performance appraisers will have a positive attitude towards the adoption

of the Digital Teacher Performance Appraisal and Development tool if they perceive that using technology will enhance efficiency in appraising teachers. Therefore the principals will have a positive attitude towards adoption of the Digital Teacher Performance Appraisal and Development Tool if they believe that the system will enhance their efficiency in teacher's appraisal and therefore principals will be ready and willing to adopt it.

Effort Expectancy refers to the degree of ease associated with the use of the technology. Users will be more inclined to use the technology if they perceive it to be easy to use. Hence users are likely to use technology that does not require a lot of effort to use (Venkatesh *et al.*, 2003). Therefore performance appraisers will have a positive attitude towards the adoption of the Digital Teacher Performance Appraisal and Development Tool if they perceive the system to be relatively easy to use for appraising teachers in comparison to the previous system and if it requires less effort. Performance appraisers will find the digital system easier to use if they have an understanding of the appraisal process and the skills on how to use the digital appraisal tool to conduct the assessment of teachers. On the other hand appraisers, who lack ICT skills and skills of operating the appraisal system, may perceive the system as difficult affecting their preparedness and consequently willingness to use the system for appraising teachers. Therefore successful incorporation of the system in appraising teachers requires training of principals to equip them with skills and knowledge in ICT and how to operate the Digital Teacher Performance Appraisal and Development Tool.

Teachers' attitude towards the appraisal system is dependent on the extent to which the appraisal system adds value to the teaching practice. A study by the Organization for Economic Cooperation and Development (OECD, 2019) involving 90, 000 teachers across 24 countries has revealed that teachers find the appraisal process to have a significant impact on their practice

when it provided feedback to the teachers as this contributed to the development of their practice. Performance feedback informs teachers about the extent to which they have met professional teachings standards, how they performed and the improvement needed. This helps teachers to identify and address teaching and professional gaps to meet expected results effectively enhancing teachers' performance and professional development. However when feedback is not provided teachers find the appraisal process as having no value to their teaching practice hence the negative attitude towards the appraisal system.

Examination of the influence of teachers' appraisal by Kagema and Irungu (2018) revealed that teachers had a negative attitude towards the TPAD appraisal system as a result of the demerits accruing out of the system. The study used questionnaires to collect data from 460 teachers from 40 secondary schools. Data was analysed using descriptive and inferential statistics. The study found out that 63.6% of secondary schools teachers from Kirinyaga and Muranga counties felt that teacher appraisals are unfavourable to teachers. According to the teachers, the TPAD appraisal lacks a mainstreaming policy on promotions and transfers. Therefore teachers view the appraisal process only as a formality and unnecessary. This is further exacerbated by the limited knowledge of school principals on the operation of the system (Machio, 2017) resulting in procedural mistakes that resulted in negative perceptions of the teacher performance appraisal.

A more recent study by Owuonda *et al.*, (2020) in Homabay County has revealed that teachers in public secondary schools have a negative attitude towards the teachers' performance appraisal. The study collected data from 235 principals and 399 heads of departments using questionnaires and interviews. The data was analysed using descriptive statistics. The study found negative attitude among 75.5% of the teachers who feared that they could be dismissed if

the appraisal outcomes revealed that they underperformed and 71.4% of the teachers who felt that the appraisal system is time consuming. The study further revealed that 88.7% of the school principals did not feel comfortable when they were being appraised by the sub-county TSC director. Only 11.3% of the principals liked being appraised. Therefore majority of the principals had a negative attitude towards performance appraisal. Further 64.5% of the principals who were not comfortable being appraised feared that their weaknesses may be exposed during the evaluation process while 35.5% of the principals said that they were not comfortable because the appraisal process was time consuming.

The study by Owuonda *et al.*, (2020) also revealed that 91.6% of the principals mentioned that teachers performance appraisal were unnecessary wasteful of their time as they was no reward attached to the process. It is only 8.4% of the principals that felt appraisal was the surest way of monitoring curriculum implementation (Owuonda *et al.*, 2020). Hence it is critical that authorities responsible for implementing teachers' appraisal take into consideration their perception of the system.

2.4 Summary and Knowledge Gaps

Reviewed literature has shown that to successfully adopt and implement online teacher performance appraisal in their respective schools, principals need to be adequately prepared. The school principals need to undergo training to enhance their understanding of the digital performance appraisal system and how to use the system to appraise teachers; the principals also need to ensure that their schools have all the necessary ICT resources to support adoption of the online system in their schools; and the principals need to have a positive attitude towards use of online appraisal systems to evaluate the performance of teachers.

Previous studies have revealed inherent weakness that may be a probable indication of lack of adequate preparation of appraisers. Khatete and Macharia (2020) established that appraisers filled the self-assessment mechanically to please the appraisers without reflecting on their actual performance while Machio (2017) revealed that public secondary school principals are ineffective in conducting teachers' appraisal. However these studies examined the influence of online appraisal system on the performance of teachers while the current study assessed the influence of principal's preparedness on the adoption of online teacher performance appraisal among secondary schools.

A study by Oyaró (2016) revealed inadequate preparedness through lack of training however this study only focused on one aspect of preparedness (training of appraisers). In addition to training, the current study examined principals' perceptions; principals ICT skills; and the provision of ICT resources required for adoption of the online teacher appraisal system. Oyaró (2016) only examined the percentage and number of teachers and principals that had undergone training on the online teachers' performance appraisal and whether the training was adequate. This study did not examine whether the training had enhanced teachers /principals understanding of the online appraisal system and how to use the system to appraise teachers.

Gakime (2016) demonstrated lack of preparedness among secondary schools due to limited ICT skills among teachers, however this study assessed influence of ICT on teaching. Therefore the study determine the extent to which ICT skills influenced teachers preparedness to adopt ICT in teaching while the current study examined how principals ICT skills influenced the adoption of the online teacher performance appraisal system. The study did not examine the skills required by performance appraisers to effectively conduct online teacher appraisal.

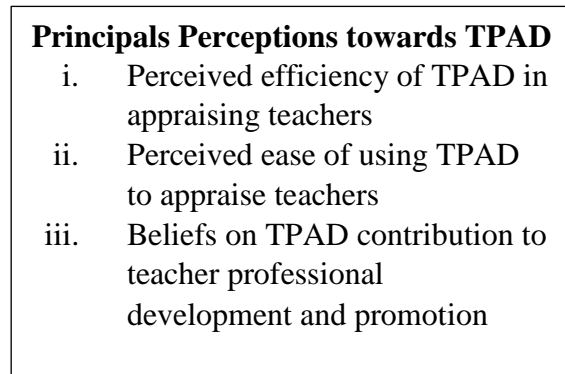
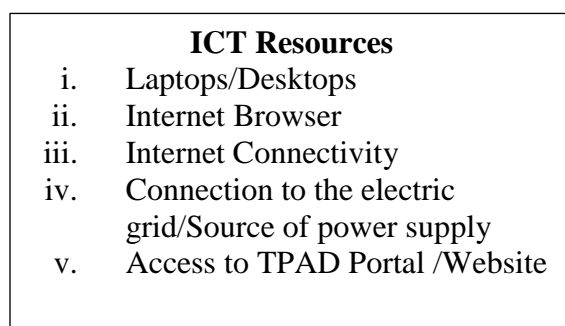
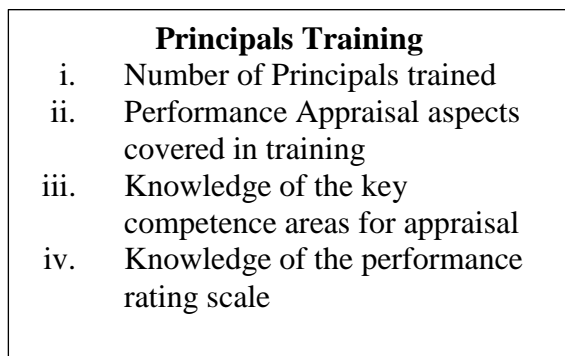
Whereas Owuonda *et al.*, (2020) revealed that principals had negative perceptions towards teacher's performance appraisal system; this study did not examine how the negative perceptions influenced teachers' preparedness to adopt the online teacher performance appraisal which the current study examined. Further this study only examined one aspect of preparedness. In addition to principals perceptions, the current study examined the; principals training; and the provision of ICT resources required for adoption of the online teacher appraisal system.

Anyonje (2015) revealed that secondary schools have unreliable internet and power supply however the two are only part of the ICT resources required to implement online appraisal systems in addition to laptops, desktops, software, TPAD portal and browsers. Anyonje (2015) examined how ICT resources influenced integration of ICT in learning and secondary schools while the current study examined the influence ICT resources on the adoption of the online teacher performance appraisal systems.

2.5 Conceptual Framework

This study sought to assess the influence of Principals Preparedness on the Adoption of Digital Teacher Performance Appraisal and Development Tool. The three aspects of Principals Preparedness: Principals Training; Provision of ICT Resources; and Principals Perceptions towards online appraisal systems are the independent variables while the Adoption of the Online Teacher Performance Appraisal is the dependent Variable as shown in Figure 2.1:

Independent Variables



Dependent Variable

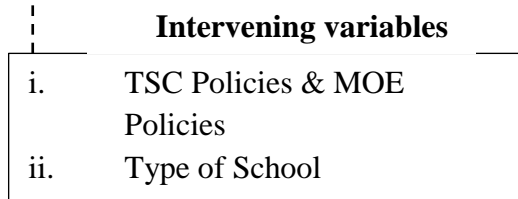
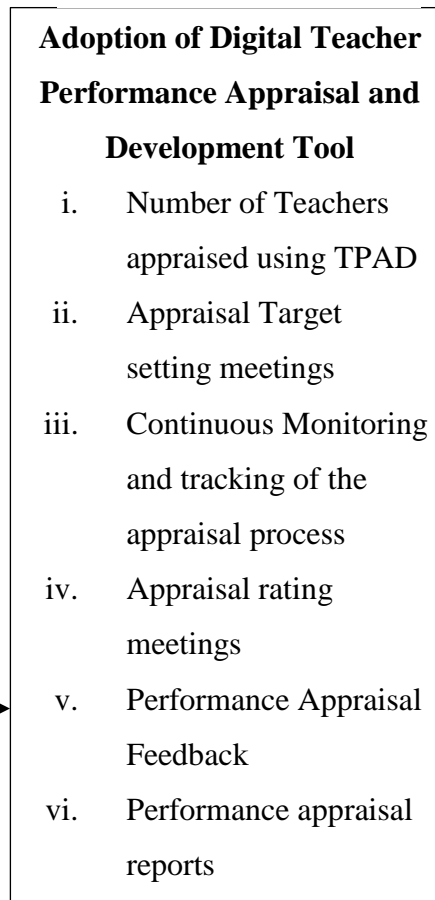


Figure 2.1: Conceptual Framework

To successfully adopt and implement online teacher performance appraisal in their respective schools, principals need to be adequately prepared. The school principals need to undergo training to enhance their understanding of the digital performance appraisal system in terms of the tools to be used to conduct the appraisal; the process of conducting the appraisal; the

standards and targets upon which teachers performance will be evaluated; and how to rate the teachers performance.

The principals also need to ensure that their schools have all the necessary ICT resources to support adoption of the online system in their schools: These include laptops, desktops, internet browser for accessing the TPAD portal, reliable internet connectivity and connection to a source of power.

The Principals also need to have a positive perceptions towards the online appraisal system which is determine by their perception of the efficiency and ease of using the online appraisal; their perception towards usefulness of online systems and confidence in their ICT skills.

This relationship is affected by TSC policy which provide guidelines and legal framework for implementing the digital appraisal tool; principal's age as younger principals are equipped with ICT skills and are more inclined to use online appraisals in comparison to older principals and type of school (national, extra county, county, or sub-county schools) as national schools have better ICT resources with teachers who have a high level of ICT skills compared to local schools.

2.6 Operationalization of Variables

Table 2.1 provides the operationalization of the study variables:

Table 2.1: Operational Definition of Variables

Variable	Type of Variable	Indicators	Type of Analysis	Scale of Measurement
Principals Training	Independent	<ul style="list-style-type: none"> -Number of Principals trained -Performance Appraisal aspects covered in training -Number of Principals with knowledge of the key competence areas for appraisal -Number of principals with knowledge of the performance rating scale 	Descriptive & inferential Analysis	Nominal Ordinal
ICT Resources	Independent	<ul style="list-style-type: none"> -Principals that use Laptops for appraisals - Principals that use Desktops for appraisals -Type of internet used by principals - Source of power supply used by principals -Principals Access to TPAD Portal 	Descriptive & inferential Analysis	Nominal Ordinal
Principals Perceptions	Independent	<ul style="list-style-type: none"> - Principals beliefs of the effectiveness of TPAD in measuring teachers performance and competence -Principals perception on the efficiency of TPAD -Principals perception ease of using TPAD to appraise teachers -Principals beliefs on contribution of TPAD to teacher's professional development and job promotion. 	Descriptive & inferential Analysis	Nominal Ordinal
Adoption of the Digital Teacher Performance	Dependent	<ul style="list-style-type: none"> -Number of Teachers appraised using TPAD -Principals who conduct appraisal 	Descriptive & inferential	Nominal Ordinal

Appraisal Tool	target setting meetings	Analysis
	<ul style="list-style-type: none"><li data-bbox="631 247 1073 352">-Principals who continuously monitor and track the appraisal process<li data-bbox="631 373 1073 443">-Principals who conduct appraisal rating meetings<li data-bbox="631 464 1073 569">-Principals who provide performance appraisal feedback to teachers<li data-bbox="631 590 1073 695">-Principals who submit performance appraisal reports to the TSC sub county director	

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to conduct the study. It covers the research design, study area, target population, sampling procedures and sample size, research instrument, validity and reliability of the research instruments, data collection methods, data analysis procedures, and ethical considerations.

3.2 Research Design

A research design refers to the framework that describes the data collection and data analysis procedures to be used in the collection and analysis of data to provide answers to research questions (Prabhat & Mishra, 2015). This study utilized a descriptive research design to assess the influence of principals' preparedness on the adoption of the Digital Teacher Performance Appraisal System. A descriptive research design provides an accurate and systematic description of the phenomena under study without manipulating any of the variables under study (Prabhat & Mishra, 2015). This approach enables the study of a large population through the collection of information using both quantitative and qualitative methods from sample of individuals.

This design was appropriate as this study sought to provide a quantitative and qualitative description of the influence of principals' preparedness on the adoption of digital teacher performance appraisal systems. Bryman (2016) posits that quantitative methods are useful in populating statistics from a high-volume sample size to gain statistically valid results in customer insight. Use of quantitative approaches facilitated collection of data from a representative sample which was generalized to the wider target population of principals in Kiambu County. This study

also collected quantitative data on the demographic characteristics of principals and the study variables as the number of principals that have undergone training on the digital appraisal system; and schools with ICT resources required operating the online appraisal system. Quantitative methods were also used for analysis of data to determine the significance of the correlation between principals' preparedness and the adoption of the digital teacher appraisal system. Qualitative methods on the other hand were instrumental in collecting data on principals attitude towards the digital teacher performance appraisal system and provision of in-depth descriptions of how principals preparedness influence adoption of digital appraisal systems. The design was also considered to be suitable for this study as this study sought to collect quantitative data through the use of questionnaires and qualitative data through the use of interview guide.

3.3 Target Population

Etikan *et al.*, (2016) defines a target population as the entire group of individuals or objects with common observable characteristics upon which the study findings are generalized. The target population for this study were school principals in public secondary schools in Kiambu and the TSC sub county directors. School principals were chosen as TPAD implementation allocates the oversight role of appraising and giving progress reports on teacher's performance to the school principals (TSC, 2018). Statistics provided by the Ruiru TSC Sub County Office indicates that there are 278 principals who are distributed across the 13 sub counties as shown in Table 3.1:

Table 3.1: Target Population

Sub County	School Principals	Percentage
1. Gatundu South	37	13.3%
2. Gatundu North	37	13.3%
3. Juja	11	4.0%
4. Thika West	12	4.3%
5. Thika East	9	3.2%
6. Ruiru	13	4.7%
7. Githunguri	37	13.3%
8. Kiambu	15	5.4%
9. Kiambaa	15	5.4%
10. Limuru	25	9.0%
11. Kikuyu	19	6.8%
12. Kabete	16	5.8%
13. Lari	32	11.5%
Total	278	100.0

Source: Ruiru TSC Sub-County Office (2022)

3.4 Sampling Procedure and Sampling Size

Sampling procedure refers to the process that is used to determine and select the sample size for the study.

3.4.1 Sample Size

The sample size for this study was determined using Yamane formula (1967) as indicated below:

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

Where: n=sample size;

N= population under study; and

e=Marginal error

Given:

N= 278 Principals

e= margin error of 0.05

Standard confidence level is 95%, for better accuracy which will give a margin error of 0.05.

Therefore, the Sample size is calculated as follows:

$$n=278/1+278(0.05)^2$$

$$n= 164$$

Therefore the sample size for this study was 164 principals. The sample was proportionally distributed across sub counties as indicated in Table 3.2:

Table 3.2: Sample Size

Sub County	School Principals	Percentage
1. Gatundu South	22	13.3%
2. Gatundu North	22	13.3%
3. Juja	6	4.0%
4. Thika East	7	4.3%
5. Thika West	5	3.2%
6. Ruiru	8	4.7%
7. Githunguri	22	13.3%
8. Kiambu	9	5.4%
9. Kiambaa	9	5.4%
10. Limuru	15	9.0%
11. Kikuyu	11	6.8%
12. Kabete	9	5.8%
13. Lari	19	11.5%
Total	164	100.0

3.4.2 Sampling Techniques

This study utilized stratified and simple random sampling techniques to select the school principals who participated in this study. A sampling frame of principals in Kiambu County was obtained from the TSC County office. The principals were stratified into strata based on the 13 sub counties. Proportionate sampling was used to ensure that each sub county has a proportionate number of principals in the sample as shown in table 3.2. From each sub county list of principals, random sampling technique was used to randomly select principals that participated in the study. Purposive sampling was used to identify the TSC sub county directors.

3.5 Research Instruments

This study used questionnaires for principals and interview guides for TSC directors. Questionnaires were used to collect data from the school principals. The questionnaires contained both close-ended questions and open-ended questions. Close-ended questionnaires had predetermined category of answers from which the principals easily select responses. This enhanced the questionnaire response rate and collection of more accurate data that can easily be coded, quantified and analysed. Open ended questions were helpful in qualifying and clarifying responses from close ended questions. Interviews guides were used to collect data from the sub county TSC directors. This facilitated collection of in-depth qualitative data on the study variables to complement data collected through the questionnaire.

3.5.1 Pilot Study

Piloting was conducted among 16 principals and 1 sub county director representing 10% which was representative sample for piloting of research instruments. Piloting of the research

instruments was done for purposes of identifying ambiguities, duplication and errors for improvement of the questionnaire and interview guide before the actual data collection process. Piloting was also help to determine whether the instructions are clear to the respondents. The schools where piloting was conducted were not included in the actual study. Findings of the pilot study revealed the principals were in apposition to understand and respond to the questions with exception of the questions with a likert scale. The questionnaire was therefore revised to inculcate a rating scale of the items on the likert scale. This made it easier for the principals to indicate the extent to which they agreed or disagreed with statements in the questions.

3.5.2 Validity of the Research Instruments

Validity is the degree to which results obtained from the analysis of the data represents the actual phenomenon under investigation. Validity of the instruments was determined by expert judgments. Expert assessment was used to make a determination as to whether the research questions measure the variables under the study. The researcher consulted quality assurance and standards officer from the TSC county office to make a determination on whether the instruments actually measure the variables under study. The instruments were also scrutinized by university supervisors to judge the items on their appropriateness of content, and need for modification so as to achieve the objectives of study.

3.5.3 Reliability of the Research Instruments

Reliability refers to the degree in which a research instrument gives equivalent results over a number of repeated trials (Prabhat & Mishra, 2015). The reliability of the research instruments was determined using the Cronbach Alpha method. This method is more suited for determining

the internal consistency of an instrument with multiple responses on a scale like a questionnaire on a Likert scale. The SPSS Statistics Reliability Analysis function was used to conduct analysis and generate Cronbach's reliability Co-efficient. The instruments were considered to be reliable as they yield reliability coefficient of 0.7 and above in indicated in Table 3.3:

Table 3.3: Reliability Statistics

Item	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
Principals Training	.799	.797	9
ICT Resources	.790	.732	10
Principals Perceptions towards TPAD System	.784	.723	8
Adoption of the Online Teacher Appraisal System	.737	.804	6

3.6 Data Collection Procedures

Questionnaires were self-administered to head teachers in their respective schools. The administration was conducted per school in each sub county and upon completion the researcher moved to the next sub county until all the sub counties were covered. The principals were given time to fill the questionnaires after which they were collected. The researcher booked appointments with the Directors and interviews were conducted on the booked days. The interviews were recorded and transcribed for analysis.

3.7 Data Analysis

Data was analysed using both quantitative and qualitative techniques. The statistical Package for Social Sciences (SPSS) software was used to conduct the analysis. The software was chosen due to its ability to analyse large datasets. Filled questionnaires were checked for completeness,

errors and prepared for analysis. The data was coded and entered into the SPSS for analysis and generation of measures of central tendency as means and measures of dispersion such as standard deviations.

Pearson correlation will be used to determine the significance of the correlation between Principals Preparedness and adoption of the Digital Teacher Performance Appraisal Tool study variables. A correlation coefficient of +1 indicated that the variables were perfectly positively correlated; -1 meant that the variables were perfectly negatively correlated and zero meant the variables were not correlated. Multiple regression analysis was used to test the significance of the relationship between the independent and the dependent variables. The equation was expressed as follows:

$$Y = \beta + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where:

Y = Adoption of the Digital Teacher Performance Appraisal Tool

β = Constant

X_1 = Principal Training

X_2 = ICT Resources

X_4 = Principals Perceptions towards TPAD system

$\beta_1, \beta_2, \beta_3$ = the slope of the independent variable

e = error term

Qualitative data drawn from key informant interviews and the open-ended questions was analysed based on themes drawn from the research objectives. The researcher closely examined

the interview transcripts for emerging patterns and themes in relation to the research objective. Qualitative data was presented in a verbatim quotes and narrative form.

3.8 Ethical Considerations

Ethical approval was obtained from the KCA University Ethics Review Committee. A research permit was also obtained from (NACOSTI). Authorization to conduct the research was sought from the Kiambu County Commissioner and the County Education Office. Respondents were required to sign an informed consent letter which contained details on the purpose of the research and terms of participation in the study. Respondents were not unduly pressured to participate in the study and were informed that their participation was voluntary and they were free to withdraw at any point if they feel aggrieved. Data confidentiality and respondent anonymity was guaranteed as respondents participating in the study were not required to write their names or the names of their schools. Data collected was only used for research purposes. In addition, the researcher was keen to cause minimal interference with the respondents' administrative and teaching duties.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the research findings of the study based on the assessment of the the influence of Principals preparedness on adoption of Digital Teacher Performance Appraisal Tool in public secondary schools in Kiambu County under the following sections: Response rate; Respondents Demographic Information; Findings of the Study per objective and Regression Analysis.

4.2 Response Rate

A total of 164 questionnaires were administered to principals of out of which 156 questionnaires were filed and returned giving a response rate of 95.1%. Seven (7) interviews were successfully conducted with TSC Sub County Officers out of the targeted 13 interviews 53.8% response rate. This gives an overall response rate of 92.1% as indicated in in Table 4.1. This response was considered to be sufficient for analysis and drawing of conclusions. Mugenda and Mugenda (2009) observe that a response rate of 70% and above is excellent.

Table 4.1: Response Return Rate

Category	Administered	Returned	Response Rate (%)
Questionnaires	164	156	95.1
Interviews	13	7	53.8
Total	177	163	92.1%

4.3 Respondents Demographic Information

This section provides information on the respondents' gender, age education level, and work experience in the following subsections:

4.3.1 Respondents Gender

Table 4.2 provides information of the gender of the respondents:

Table 4.2: Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	102	65.4
Female	54	34.6
Total	156	100%

Table 4.2 indicates that 66.4 of the respondents were male and 34.6% were female. This implies that there are more male school principals among public secondary schools in Kiambu County compared to female school principals. Gebhardt *et al.*, (2019) observes that female teachers do not differ greatly in the extent of their use of ICT in performing their duties compared to their male counterparts. Therefore the high number of male school principals compared to female school principals may not have a bearing on their willingness to adopt digital appraisal systems in appraising teachers.

4.3.3 Age of the Respondents School Principals

The age of the respondents is an intervening variable influences willingness of school principals' readiness to adopt use of digital systems particularly online appraisal of teachers. Table 4.3 indicates the age categories of the respondents.

Table 4.3: Age of the School Principals Respondents

Age	Frequency	Percentage (%)
41-50 years	39	25.0
Above 51 years	117	75.0
Total	156	100%

Table 4.3 indicates that 75% of the school principals were above 51 years and 25% were within the age bracket of 41-50 years. None of the school principals was below 40 years. This implies three quarters of principals in public secondary schools are above 51 years and only a quarter of the school principals are within the 41-50 age brackets. Therefore majority of the school principals are older. According to Mutuku & Ogutu, (2018) there is low usage of ICT among older teachers compared to young and vibrant teachers who are more conversant and competent in technological issues. Most old teachers may have difficulties using ICT to perform their duties due to their low competence levels. Hence a significantly high number of older school principals in public secondary schools in Kiambu County may affect their perception towards adoption of the digital teacher appraisal systems as well as their ability and willingness to adopt use of digital appraisal systems in appraising teachers.

4.3.4 Highest Level of Education Attained by the Respondents

Table 4.4 indicates that some of the school principals had degree level of education while some of them had masters level of education:

Table 4.4: Highest Level of Education Attained by Respondents

	Frequency	Percentage (%)
Degree	105	67.3%
Masters	51	32.7%
Total	156	100%

Table 4.4 indicates that 67.3% of the school principals had degree level of education while 32.7% had masters level of education. This implies that all the school principals in public schools in Kiambu County had the required level of education to teach in secondary schools. Teachers Service Commission Regulations requires that teachers in secondary school are required to a bachelor degree in secondary education.

4.3.5 Principals Work Experience

School Principals work experience is an indication of their practical knowledge and involvement in the preparation for adoption of the digital teacher appraisal system as indicated in Table 4.5:

Table 4.5: Respondents Work Experience

Gender	School Principals	
	Frequency	Percentage (%)
Below 5 years	59	37.8
6-10 years	78	50.0
11-15 years	19	12.2
Total	156	100%

Table 4.4 indicates that 50.0% of the school principals had a work experience of between 6-10 years; 38.8% had a work experience of 5 years and below; and 12.2% had a work experience of 11-15 years. This implies that half of the school principals in public secondary schools in

Kiambu County had a work experience of over 6 years work experience; over a third had below 5 years' work experience and only 12.2% had more than 11 years' work experience. Cumulatively 62.2% of the principals had over 6 years' experience. The Teacher Performance Appraisal and Development (TPAD) Online management system was rolled out in all public secondary schools in Kenya in 2016 (TSC, 2018). This means that majority of the principals have vast experience in their oversight role of appraising teachers using the TPAD system as they were already school principals when the system was launched. Therefore they can provide reliable information on the level of preparedness of their respective schools to adopt the digital appraisal system. Majority of the principals are also in apposition to compare the current system and the old system and make a determination if the current system is more efficient than the previous system.

4.4 Principals Training and Adoption of the Digital Performance Appraisal Tools

The first objective of this study was to evaluate the extent to which Principals Training influenced the adoption of the Online Teacher Performance Appraisal System. Respondents were therefore required to indicate whether they had undergone training on the online teacher appraisal system prior to its adoption; the aspects that they were trained on; their understanding of the online teacher appraisal tool; and the extent of agreement with statements on how training prepared them for adoption of the online appraisal system. Interviews were also conducted with TSC sub County officers to determine if principals in their respective schools were trained. The findings are presented in the following subsections:

4.4.1 Training of School Principals

Table 4.6 indicates the number of principals who underwent training prior to the adoption of the online teacher appraisal system:

Table 4.6: Principals Training of the Online Teacher Appraisal

Underwent Training	Frequency	Percentage (%)
YES	145	92.9%
NO	11	7.1%
Total	156	100%

Table 4.6 indicates that all of the 156 principals involved in this study 92.9% had undergone training on the digital teacher appraisal system and only 7.1% had not undergone training. Therefore a substantially large proportion of school principals in public secondary schools in Kiambu County underwent training on the digital teacher appraisal system. Interviews conducted with TSC sub county officers indicate that each school was required to front name of two teachers for training on the TPAD system and therefore in cases where the principals was not trained, the deputy principals or other teachers were trained. The interviews further revealed that the teachers whose names were fronted underwent training for a period of three days in 2021 as part of the preparation to familiarize with the TPAD system prior to its adoption and utilization in appraising teachers. Below are excerpts of the interviews with the TSC sub county officers;

“Each school was required to identify and submit the name of two teachers. The sub county directors on the other hand were required to submit the selected names in their respective sub counties to the Director of quality assurance and standards for purposes of training.” KII#1
TSC sub county director

“All the teachers whose names were fronted by their respective schools underwent three day training from 25th to 27th February, 2021. The training was aimed at enabling the selected

teachers to familiarize with the system and how to use the TPAD tool so that they can accurately capture the details of the teachers when assessing them.” KII#3 TSC sub county director

“The county directors, sub county directors and County ICT officers were trained first before the teachers were trained. The three were expected to cascade the training to the school levels by training two teachers in each of the schools in their respective sub counties. The County ICT officers provided technical support on technical aspects of the TPAD system during the training.” KII#2 TSC sub county director.

Mirado, (2019) observes that training enhances principals understanding of the appraisal process including target setting; appraisal standards and the rating methods which enhances the credibility of the process. It equips principals with the skills on how to use the digital appraisal tool to conduct the assessment as required. Mirado (2019) further observes that principals who are properly trained demonstrate high level of competence and understanding of the appraisal process and appear to be more credible to the teachers being appraised. As such their reports are usually perceived to be credible. Therefore the training provided to school principals in public secondary schools in Kiambu County was crucial in their preparation for the adoption of the digital teacher appraisal system. Appraisers tend to be willing to adopt new appraisal systems when they are adequately trained on how to use the system. Contrary, Oyaro (2016) observes that appraisers who are not adequately prepared through training tend to develop a negative perception to performance appraisal process. The appraisers perceive that it would be difficult to use a new system that they are not accustomed to.

Therefore training provided to the schools principals in Kiambu County was critical in their preparation to adopt the TPAD tool for appraising teachers. However the limited period of 3 days when the training was conducted may not have been sufficient to adequately prepare the school principals to use the system in appraising teachers.

4.4.2 Aspects of Principals Training

Table 4.7 indicates the aspects of the online Teacher Appraisal system that the principals were trained on:

Table 4.7: Aspects of Principals Training

Performance Appraisal Aspect Covered	Frequency	Percentage
1 Principal's roles in the teacher performance appraisal procedures	156	100
2 The performance appraisal procedures	137	87.8
3 Performance Evaluation criteria	98	62.8
4 Performance Evaluation Rating	39	25.0
5 Professional Teaching standards	133	85.2

Findings in Table 4.7 show that all the principals (100%) indicated that they were trained on their roles in appraising the teachers using the digital appraisal system; 87.8% indicated that they were trained on performance appraisal procedures; 62.8% indicated that they were trained on performance evaluation criteria; only 25% received training on the evaluation rating; and 85.2% received training on the professional teaching standards. This implies that the training did not adequately cover all the critical aspects required to prepare the principals in the adoption of the system. Information provided by the TSC sub county officers indicate that the principals were trained all the important aspects of the TPAD system.

While the TSC Sub-County directors indicated that the school principals were trained in all the critical aspects, some of the principals indicated that performance competence areas and performance rating scale were not covered in the training. This can be attributed to the limited

training period of three (3) days which may not have been adequate to comprehensively cover all the critical aspects under the TPAD system.

Al-Kiyumi and Hammad, (2020) observes that whereas training of the performance appraiser is critical for preparation of adopting a new appraisal system, lack of a comprehensive training may adversely affect the preparation of the appraisers. Appraisers who are not adequately prepared through training may not conduct a credible appraisal of teachers as they lack knowledge and understanding of the appraisal process.

Mirado (2019) observes that when the appraisers are not extensively trained they lose their credibility and the outcome of the process may not reflect on the actual performance of the teachers. Therefore, it is imperative that all aspects of the TPAD system are covered in the training. Thus, inability of the training process adequately cover all the critical aspects of the TPAD system not only affects the principals preparedness but also their ability to effectively appraise teachers in their schools.

4.4.3 Principals Knowledge and Understanding of the TPAD Tool

Principal's knowledge and understanding of the TPAD tool is critical in determining if the training they undertook equipped them with the required knowledge on how to use the TPAD to conduct appraisals. The principals were therefore required to indicate the performance competence areas against which teachers were evaluated and the rating scale used. Interview with the TSC Sub-County officers revealed that the TPAD system assesses teacher performance of teachers based on 7 performance competence areas as indicated in Table 4.8:

Table 4.8: Performance Competence Areas

Performance Competency Area	Indicators	Total Marks
1. Professional Knowledge & Application	Ability to prepare schemes of work; lesson plans; lesson note; teaching/learning aids; assess learners and maintain learners' progress records.	30
2. Time Management	Ability to attend class on time consistently and adhere to the school time table	10
3. Innovation & Creativity in Teaching	Ability to improvise and use local resources to enhance teaching and learning outcomes	10
4. Professional Development	Ability to identify individual performance gaps and training needs	15
6. Promotion of Co-curricular Activities	Ability to organize co-curricular & life skills learning activities	10
7. Protection of learners, discipline and Teachers Conduct	Ability to protect and instil discipline to learners; and adhere to professional and legal guidelines	15
8. Collaboration with Parents and Stakeholders	Ability to establish and maintain collaborative relations with parents/guardians and the community	10

Out of the 156 principals involved in this study, 39(25.0%) were able to identify all of the Seven performance competence areas used to evaluate teachers under the TPAD System; 59 (37.8%) were able to identify 3 performance competence areas; and 58 (37.2%) did not have an idea of what the performance competence areas were. This implies that only a quarter of the school principals in public schools in Kiambu have an understanding of the performance competency areas used to evaluate teachers. Three quarters of the principals have limited knowledge and understanding of the key performance competence areas used for valuating teachers.

Limited knowledge and understanding among the school principals may be attribute to lack of training in performance competence areas as indicated in **Table 4.7: Aspects of**

Principals Training where 62.8% of the school principals indicate that they were trained on performance evaluation criteria. The performance competence areas form the basis of evaluating teachers. Hence limited knowledge and understanding implies that the principals training did not equip them with the required knowledge on how to use the TPAD to conduct appraisals. As a result, they may not have knowledge of the performance competence areas used to evaluate teachers.

Provision of a comprehensive training of the TPAD system is critical in ensuring that teachers are appraised appropriately and the appraisal results reflects on their performance. According to Maharaj (2017), lack of extensive training results in situation where the appraisers do not have a comprehensive understanding of the appraisal system which adversely affects their ability to conduct credible appraisals. This may have adverse effects on the outcome of the appraisal process the appraisers may not provide an accurate picture of the teachers actual performance. Mirado (2019) observes that when the appraisers are not extensively trained on how to appraise the teachers, teachers lose confidence in their appraisers and tend to question the credibility and results of the appraisal process. Similarly, the appraisal system was not able to achieve its objective of enhancing the quality of education as the results do not reflect on the actual performance of teachers.

The online appraisal system rates the performance of teachers on a scale of 1-5 based on 5 performance indicators/metrics as shown in Table 4.9:

Table 4.9: Teachers Rating Scale

Rating Indicator	Rating Scale
1. Teacher fully met and exceeded the targets	5-Very Good
2. Teacher fully met the targets	4-Good
3. Teacher met most of the targets	3-average
4. Teacher met some of the targets	2-Below average
5. Teacher did not meet the targets	1-Inaequate

Table 4.9 indicates that out of the 156 principals involved in this study, 39(25.0%) were able to indicate the appropriate rating scale; 58 (37.2%) indicated the wrong rating scale with some inverting the scale; and 59 (37.8%) did not have an idea of what the rating scale was. Therefore, three quarters of the principals do not know how to rate the teachers performance. This implies that the training did not equip the principals with knowledge of how to rate the teachers.

Limited knowledge and understanding among the school principals may be attributed to lack of training on the performance evaluation rating as indicated in **Table 4.7: Aspects of Principals Training** where only 25.0% the school principals indicate that they were trained on performance evaluation rating. Principals' limited understanding of the rating scale resulted in situations where some of the principals confused the scale with ranking. Consequently, some of the principals indicated that teachers who fully met and exceeded the targets were rated using 1 instead of the required 5-Very Good. This may result in situations where teachers who have exceeded the targets are rated as having failed to meet the targets. This may compromise the outcome of the appraisal process hence the principals need further training on the how rate teachers performance.

4.4.4 Influence of Principals Training on Preparedness to adopt Online Teacher Appraisal

The school principals were also required to indicate the extent to which they agreed or disagreed on how the training influenced their preparedness on a Likert scale of 1-5: Table 4.9 indicates the findings of the study:

Table 4.10: Influence of Principals Training on Adoption of Online Teacher Appraisal

Statement	Minimum	Maximum	Mean	Std. Dev.
Training was instrumental in the clarification of my responsibilities in overseeing the implementation of teachers' performance appraisal in the school institution.	4.00	5.00	4.974	.158
Training on the performance appraisal procedures enhanced my understanding of how to undertake teachers appraisal	4.00	5.00	4.948	.221
Training on evaluation criteria enhanced my understanding of the performance competence areas and performance indicators used to evaluate teachers.	2.00	5.00	2.496	1.201
Training on performance evaluation rating equipped me with skills on the rating scale used to rate teachers performance	4.00	5.00	2.429	1.391
Training on the professional teaching standards was instrumental in enabling me to key areas of evaluating teachers professional knowledge	1.00	5.00	4.923	.551
Aggregate Mean & Standard Deviation			3.954	0.704

An aggregate mean of 3.954 in Table 4.10 indicates that the school principals agreed that they had undergone training in preparation for the adoption of the TPAD system. A lower standard deviation of 0.704 indicates that the individual responses on average are 0.7 points away from the mean. This implies that the data sets are closely clustered around the mean. Therefore,

principals training influenced their preparedness for adoption of the TPAD system. Mirado, (2019) and Oyaro (2016) observe that training enhances principals understanding of the appraisal process which enhances their competence and credibility in appraising teachers. Therefore, training of school principals in public secondary schools in Kiambu County prior to the implementation of the TPAD system was crucial in their preparation to adopt the system.

The schools principals strongly agreed that the training was instrumental in the clarification of their responsibilities under the TPAD system (Mean=4.974; Std. Dev. =0.158), the training on the performance appraisal procedures enhanced their understanding of how to undertake teachers appraisal (Mean=4.948; Std. Dev. =0.221); and training on the professional teaching standards was instrumental in enabling them understand key areas of evaluating teachers professional knowledge (Mean=4.923; Std. Dev. =0.551). However the school principals disagreed that training on evaluation criteria enhanced their understanding of the performance competence areas and performance indicators used to evaluate teachers (Mean=2.496; Std. Dev.=1.201); and training on performance evaluation rating equipped them with skills on the rating scale used to rate teachers performance (Mean=2.429; Std. Dev. =1.391).

This implies that the training equipped the school principals with knowledge of their role in appraising teachers under the TPAD system and procedures for appraising teachers and key area for assessing teachers' professionalism. This is quite evident in in **Table 4.7: Aspects of Principals Training** where all the principals indicated that they were trained on the roles in appraising teachers; 87.8% indicated that they were trained on performance appraisal procedures; and 85.2% indicated that they received training on professional teaching standards. However the training did not equip the school principals with knowledge on performance competence areas

used to evaluate teachers and the rating scale used to rate teachers' performance. This is quite evident in in **Table 4.7: Aspects of Principals Training** where 62.8% of the principals indicated that they were trained on performance evaluation criteria and only 25% received training on evaluation rating. Therefore the training adequately cover principal's roles under the TPAD system; appraisal procedures and teachers professional standards. However, the training did not adequately cover performance competence areas and how to rate teachers' performance.

Whilst the principals in public secondary schools in Kiambu County are aware of their role in evaluating teachers; the procedure to follow when evaluating teachers; and the professional competencies to examine when appraising teachers, their limited knowledge on the performance competence areas and the rating scale may adversely affect their ability to produce appraisal reports that accurately reflect the teacher's performance.

This was reflected in the principals understanding of the TPAD system as indicated in Table 4.8 where 37.8% were only able to identify 3 performance competence areas out of the seven used to evaluate teachers; 37.2% did not have an idea of what the performance competence areas were; and in Table 4.9 where only 25% of the principals were able to indicate the appropriate rating scale used to rate teachers' performance.

4.5 ICT Resources and the Adoption of Digital Performance Appraisal

The second objective of this study was to assess the extent to which Provision of ICT Resources influenced the adoption of the Online Teacher Performance Appraisal System. Respondents were therefore required to indicate accessibility to crucial ICT resources required to conduct the online appraisal and extent to which ICT resources influenced their preparedness to adopt the online teacher appraisal system. The findings are discussed in the subsequent subsections:

4.5.1 Accessibility to ICT Resources

Table 4.11 indicates the ICT resources accessible to the principals for conducting teacher appraisal:

Table 4.11: Accessibility to ICT Resources

ICT Resource	Frequency	Percentage (%)
1. Hardware		
Laptops/ Desktops	156	100
2. Internet Connectivity		
Mobile Phone Hotspot/tethering	117	75.0
Wi-Fi	128	82.1
Broadband Internet Connection	59	37.8
3. Source of Power Supply		
Electricity	156	100
4. TPAD Portal /Website		
	156	100

Table 4.10 indicates that 100% of the school principals indicated that they have laptops or desktops in their schools; they have electricity and are able to access the TPAD portal. 82.1% of the school principals indicated that they use Wi-Fi for the internet; 75.0% indicated that they use mobile phone hotspot/tethering; and 37.8% indicated that they use broadband internet connection from mobile phone service providers. The principals have access to laptops or desktops for conducting the appraisal; they have access to the internet using different modes of connectivity to the internet for conducting online appraisals; they have electricity which is the main source of power; and have the software (internet browsers) required to access the TPAD portal where appraisal are conducted. This implies that principals in public secondary schools in Kiambu County have access to all the ICT resources required to appraise teachers under the TPAD system.

In their investigation of the effectiveness of technology in enhancing appraisal of employees by Anindya and Majumder, (2017) observe that it is critical that organizations have all the ICT resources required to successfully implement the online appraisal systems. Availability of the all the critical resources ensures that the appraisers are able to conduct timely using the online appraisal systems and provide reliable data that can be used for purposes of making important human resources decisions such as training needs, promotions, areas of improvement and the resources required to support employees to achieve set targets and standards. Hence principals' access to critical ICT resources required to conduct appraisal of teachers using the TPAD tool may enhance their ability to provide timely and reliable data while at the same time meeting the deadline submissions and the targets in terms of the number of teachers appraised.

4.5.2 Influence of ICT Resources on the adoption of the TPAD Tool

The principals were required to indicate their extent of agreement with statements on how availability of ICT resources in their schools had enhanced their preparedness to adopt the TPAD system for evaluating teachers using a Likert scale of 1-5: where 5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; & 1=Strongly Disagree. Table 4.12 indicates the extent to which principals agree that ICT resources enhanced their preparedness in adoption of the online teacher appraisal tool:

Table 4.12: Influence of ICT Resources on the adoption of TPAD Tool

Statement	Minimum	Maximum	Mean	Std. Deviation
My school has adequate laptops/ desktops for conducting the online teacher appraisal system	4.00	5.00	4.987	.112
I have access to a reliable internet provider with sufficient bandwidth to conduct online teacher appraisals	4.00	5.00	4.019	.137
I have access to a reliable source of power supply for desktops and laptops used to conduct appraisals	2.00	5.00	4.961	.338
I have access to technical support	2.00	5.00	4.576	1.047
I have the appropriate internet browser for accessing the TPAD website/portal	4.00	5.00	4.935	.245
I am able to access the TPAD portal for purposes of conducting teacher appraisal	1.00	5.00	4.923	.514
Aggregate Mean and Standard Deviation			4.734	0.398

An aggregate mean of 4.734 in Table 4.12 indicates that the school principals strongly agreed that they had access to ICT resources required to adopt the TPAD system in the appraisal of teachers. A lower standard deviation of 0.398 indicates that the individual responses on average are 0.3 points away from the mean. This implies that the data sets are closely clustered around the mean. According to Anido (2021) successful implementation of online appraisal systems requires adequate preparation in terms of building a technology-enhanced school environment. Thus adequate preparation for the adoption of the TPAD system by school principals requires investment in all the critical ICT resources required to appraise teachers. Therefore access to ICT

resources among secondary schools in Kiambu County was fundamental to principals' preparedness for adoption of the TPAD system.

Online appraisals requires that school principals have access to laptops/desktops that are connected to a reliable source of internet; a source of power; the internet browser for accessing the TPAD portal and technical support to address any technical issues that may arise as they use the online appraisal system as discussed in the subsequent subsections:

4.5.3 Access to Laptops/Desktops

Table 4.12 indicates that the principals strongly agreed that their respective school have adequate laptops/ desktops for conducting the online teacher appraisal system (Mean=4.987; Std. Dev. =0.112). This implies that principals in public secondary schools in Kiambu County have the access to the ICT hardware required to appraise teachers using the TPAD tool. **Table 4.10: Accessibility to ICT Resources** indicates that 100% of the school principals indicated that they have laptops or desktops in their schools.

Interviews with the TSC sub county officer revealed that most schools in their respective sub counties which were provided with laptops/desktops by the ministry of education under the ministry economic stimulus program; computer for schools programme and other donations as part of the ministries strategy to enhance ICT integration in Education. The schools also received laptops as part of government's efforts to create a central source of accurate and up dated information on the Kenyan education system under the National Education Management Information System programme. Therefore most of the schools have access to laptops and desktops. According to the TSC sub county directors,

“Schools have been receiving ICT equipment from the ministry under the economic stimulus programme, from donations and the computer for schools programme in an effort to ease integration of ICT in secondary education” KII#4 TSC sub County Officer

“Schools received computers during the launch of NEMIS in 2018 to enhance their collection of data.” KII#7 TSC sub County Officer

Therefore most of the schools have access to laptops and desktops required to appraise teachers using the TPAD tool.

4.5.4 Access to Reliable Source of Power

Table 4.12 indicates that the principals strongly agreed that they have access to a reliable source of power supply for desktops and laptops used to conduct appraisals (Mean=4.961; Std. Dev. =0.338). **Table 4.10: Accessibility to ICT Resources** indicates that 100% of the school principals indicated that their schools have electricity. Electricity is critical for purpose of powering the desktop or charging laptops used in the online appraisal systems. The TSC sub county directors indicated that most of the schools in their respective sub counties are connected to the electric grid with 100% access to electricity among secondary schools in urban areas of Kiambu County and among National, county and extra county schools. Below are some of the observations made by the officers,

“This sub county is largely urban and all the places are connected to the electrical grid. Therefore all the secondary schools in this sub county are also connected to the electrical grid.”
KII#7 TSC sub county director

“Most of the schools here were lucky enough to get connected to the electricity back during the rural electrification programme.” KII#1 TSC sub county director

“This Sub County host some of the big schools including national schools as Mangu High School. Such schools have had electricity for the longest time.” KII#3 TSC sub county director

Even though public secondary schools have access to electricity, Anyonje (2015) observes that connectivity to a reliable source of power is a critical factor that influences school

preparedness in adoption of online systems in performance of school functions. The study observes that even most schools are connected to the electrical grid, power interruptions occasioned by frequent power blackouts present a major challenge on the reliability of electricity as a source of power.

4.5.5 Access to Technical Support

Findings in Table 4.12 indicate that the principals strongly agreed that they have access to technical support (Mean=4.576; Std. Dev. =1.047). According to Baosheng, (2017), online teacher appraisal systems are built on web-based application program that are very complex with technical issues school principals may not have knowledge. Therefore, they require a technician to address technical issues that may arise in the use of the system, such as software installation; software updates; and security maintenance. Interviews with the TSC sub county directors indicated that the principals receive technical support from the County ICT officers and from fellow teachers who are well conversant with ICT systems as indicated below:

“The schools have access to technical support from the County ICT officers. The officer is responsible for providing technical support on technical aspects of the TPAD system during the training and any time when the schools may need support.” KII#4 TSC sub county director

“Some of the schools have young teachers who are techy savvy and well conversant with ICT systems and how they operate. These teachers provide assistance to the principals whenever they have difficulties or challenges navigating the TPAD portal.” KII#6 TSC sub county director

Access to technical support among secondary school teachers is crucial in the successful implementation of online appraisal systems. Baosheng, (2017) observes that online appraisal systems require technical support for purposes of security and maintenance of ICT systems that are fundamental to the Digital Appraisal System/tool. However, Ogutu, (2018) states that most

teachers in Kenyan secondary schools have low level of ICT competence. Therefore such teachers are not in apposition to handle complex ICT tasks that are critical to use of the TPAD system such as teachers may not be able to install software browsers required to access the appraisal portal to operate the system; update computer software; and may not be in a position to address crashing of the computers operating system; and secure teachers private appraisal data. Therefore it is imperative that principals have access to technical support to handle technical problems that arise while using the system.

4.5.6 Access to Reliable Internet

Table 4.12 indicates that the principals agreed that they have access to a reliable internet provider with sufficient bandwidth to conduct online teacher appraisals (Mean=4.019; Std. Dev. =0.137). Table 4.10 indicates that. 82.1% of the school principals indicated that they use Wi-Fi for the internet; 75.0% indicated that they use mobile phone hotspot/tethering; and 37.8% indicated that they use broadband internet connection from mobile phone service providers. Therefore principals in public secondary schools in Kiambu County use different mode of connectivity to access the internet for purposes of appraising teachers under the TPAD system.

Anyonje (2015) observes that connectivity to the internet plays a significant role in school preparedness to adopt digital or ICT based systems. To effectively adopt use of online systems in performance of schools functions, schools need to have access to reliable internet connectivity. The study revealed that mobile phone internet has a lower bandwidth which may affect the speed leading to delays affecting ability of teachers to conduct performance appraisal within the set timelines. Teachers may also spend a significant proportion of their time conducting assessments reducing class time. Therefore use of different modes of internet connectivity by school principals in Kiambu

County enhances the reliability of the internet as they can switch to another source if one of the providers is slow.

4.5.7 Access to the TPAD Portal

Table 4.12 indicates that the principals strongly agreed that they have the appropriate internet browser for accessing the TPAD website/portal (Mean=4.935; Std. Dev. =0.245); and they are able to access the TPAD portal for purposes of conducting teacher appraisal (Mean=4.923; Std. Dev. =0.514). Table 4.10 indicates that 100% of the school principals indicated that they are able to access the TPAD portal. Interviews with the TSC sub county directors revealed that the technical support is provided to school for purposes of installation and updating the software required to access the TPAD portal. The principal is required to access the TPAD2 portal and create a TPAD account; log into their account; complete the appraisal tool and upload the information.

The ability of school principals to access the portal and appraise the teachers depends on their level of ICT skills. Therefore, principals need to have ICT skills on how to access and use websites; creation of an account; website navigation skills and skills in filling forms online. Studies by Mutuku & Ogutu (2018); Gakime (2016) and Anyonje (2015) have shown that principals' level of ICT competence plays a significant role in their preparedness and willingness to adopt the TPAD system. Principals who possess the necessary ICT skills are ready and willing to adopt the digital teacher appraisal systems as they are able to access the TPAD portal and conduct appraisals. However principals with low level of ICT skills may not be willing to embrace digital teacher appraisal systems as they may experience difficulties accessing the portal.

4.6 Principals Perceptions towards the Digital Teacher Performance Appraisal System

The fourth objective of this study was to establish the influence of Principals Attitude towards Digital Appraisal Systems on the adoption of the Online Teacher Performance Appraisal System. The principals were therefore required to indicate their extent of agreement with statements on how their attitude towards the online appraisal systems influenced their preparedness to adopt the online teacher performance appraisal tool as shown in Table 4.13:

Table 4.13: Principals Perceptions towards the TPAD System

Statement	Minimum	Maximum	Mean	Std. Deviation
The Online/Digital Teacher Performance Appraisal system are the most accurate and efficient way of measuring teachers performance	4.00	5.00	4.955	.207
The Digital teacher performance appraisal system enhances principals efficiency in conducting teachers appraisal	4.00	5.00	4.884	.320
The Digital teacher performance appraisal system is relatively easy to use when conducting teachers appraisal	1.00	5.00	2.455	1.724
The Digital teacher performance appraisal system provides performance feedback that informs teachers how they performed and the improvement needed	2.00	5.00	2.596	1.168
The Digital teacher performance appraisal system enhances teachers professional developments	2.00	5.00	2.493	1.074
The Digital teacher performance appraisal system and facilitates job promotions and career growth	2.00	5.00	4.916	.481
Aggregate Mean & Standard Deviation			3.717	0.829

An aggregate mean of 3.717 in Table 4.13 indicates that the school principals agreed that their perceptions towards the TPAD system influenced their preparedness in adopting online appraisal systems to appraise teachers. A lower standard deviation of 0.829 indicates that the individual responses on average are 0.8 points away from the mean. This implies that the data sets are closely clustered around the mean. Studies have shown that principals will be ready and willing to adopt online appraisal systems if the system provides feedback that contributes to their professional development; facilitate job promotions and enhance career growth; improves their efficiency in appraising teachers; and if they find it easy to use in appraising teachers (OECD, 2019; Owuonda *et al.*, 2020; Kagema and Irungu, 2018). These findings are discussed in the subsequent subsections:

4.6.1 Efficiency of the TPAD System

Findings in Table 4.13 indicate that the principals strongly agreed that the digital teacher performance appraisal system is the most accurate and efficient way of measuring teachers performance (Mean=4.955; Std. Dev. =0.207); and TPAD system enhances principals efficiency in conducting teachers appraisal (Mean=4.884; Std. Dev. =0.320). This implies that principals in public secondary schools perceive the TPAD system to be accurate and more efficient in appraising teachers.

According to the Unified Theory of Acceptance and Use of Technology, users' perception towards the adoption of technology in performance of their functions is influenced by Performance expectancy. Performance expectancy refers to the extent to which the user believes that using ICT will be beneficial to their jobs. Users will be inclined to use technology if they perceive that it will enhance their job performance (Venkatesh *et al.*, 2003).

Principals will have positive perceptions towards the adoption of the TPAD tool if they perceive that using technology will enhance efficiency in appraising teachers. Hence the school principals view that TPAD system provides a more accurate and efficient way of appraising teachers means that they have positive perceptions towards the efficiency of the system.

Therefore positive perceptions of the efficiency of the TPAD system among principals in secondary schools in Kiambu County increase their willingness and readiness to adopt the online appraisal system.

4.6.2 Ease of Using the TPAD System to appraise Teachers

Findings in Table 4.13 indicate that the principals disagreed that digital teacher performance appraisal system is relatively easy to use when appraising teachers (Mean=2.455; Std. Dev. =1.724). This implies that principals in public secondary schools in Kiambu County encounter difficulties when using the TPAD system to appraise teachers. According to the Unified Theory of Acceptance and Use of Technology, users' perception towards the adoption of technology in performance of their functions is influenced by Effort Expectancy. Effort Expectancy refers to the degree of ease associated with the use of the technology. Users will be more inclined to use the technology if they perceive it to be easy to use. Hence users are likely to use technology that does not require a lot of effort to use (Venkatesh *et al.*, 2003).

Therefore principals will have positive perceptions towards the adoption of the Digital Teacher Performance Appraisal and Development Tool if they perceive the system to be relatively easy to use for appraising teachers in comparison to the previous system and if it requires less effort. Principals will find the digital system easier to use if they have an understanding of the appraisal process and the skills on how to use the digital appraisal tool to

conduct the assessment of teachers. On the other hand appraisers, who lack ICT skills and skills of operating the appraisal system, may perceive the system as difficult affecting their preparedness and consequently willingness to use the system for appraising teachers. Interviews with the TSC sub county directors revealed that whilst the principals had challenges operating the system in the early phases, their ability to operate the system has improved with time.

Principals' understanding of the appraisal process and the skills of operating the digital appraisal tool to appraise teachers is dependent on the training that they received in preparation for the adoption of the TPAD system. Given that the training was conducted for 3 days and some of the fundamental aspects were not adequately covered during the short training period, the principals may not have been adequately trained on how to use the system. Therefore the principals' view that they do not find the system to be relatively easy for appraising teachers indicates that they have difficulty in operating the system. A study by Owuonda *et al.*, (2020) revealed that 71.4% of principals in public secondary schools have difficulty in operating the system. In such cases the principals may seek assistance from the other teachers that were trained in their schools or from other teachers who are more conversant with ICT systems to conduct appraisals.

4.6.3 TPAD enhancement of Teacher Professional Development Provision

Findings in Table 4.13 indicate that the principals disagreed that the digital teacher performance appraisal system provides performance feedback that informs teachers how they performed and the improvement needed (Mean=2.596; Std. Dev. =1.168); and the system enhances teachers professional developments (Mean=2.493; Std. Dev. =1.074). This implies that principals in public secondary schools in Kiambu county do not provide feedback to teachers on how they

have performed and the areas they need to improve on to enhance their professional development.

A study by the Organization for Economic Cooperation and Development (OECD, 2019) revealed that principal's perception towards the digital appraisal system is dependent on the extent to which the appraisal system adds value to the teaching practice. Teachers find the appraisal process to be valuable if it provides feedback to the teachers as this contributed to professional development. Performance feedback informs teachers about the extent to which they have met professional teachings standards, how they performed and the improvement needed. This helps teachers to identify and address teaching and professional gaps to meet expected results effectively enhancing teachers' performance and professional development.

Interviews with TSC sub county officers revealed that the teachers are not privy to their scores of the appraisal process. The appraisal process is conducted in three parts where the teachers conduct self-assessment; they are appraised by the deputy principal; and finally the school principal who submit the performance report to the TSC sub county director without informing the teacher of their scores in the appraisals. Therefore the teachers are not aware of how they performed and the areas that they need to improve on.

Similarly even where the principals make recommendations for training to enhance teachers professional development, no teachers has undergone any training since the system was launched.

Owuonda et al., (2020) observes that principals will have a positive perception towards performance appraisals system if the appraisal contributes to their professional developments and improve their service delivery. A study by the Organization for Economic Cooperation and

Development (OECD, 2019) established that when feedback is not provided teachers find the appraisal process as having no value to their teaching practice hence the negative perceptions towards the appraisal system. Therefore lack of feedback from the TPAD system creates negative perceptions among the principals affecting their preparedness to adopt the system in appraising teachers.

4.6.4 TPAD Enhancement of Job Promotions and Career Growth

Findings in Table 4.13 indicate that the principals strongly agreed that the digital teacher performance appraisal system facilitates job promotions and career growth (Mean=4.916; Std. Dev. =0.481). Owuonda *et al.*, (2020) observes that principals will have a positive perception towards performance appraisals system if the appraisal facilitates job promotions and enhance career growth. Contrary teachers will have a negative attitude towards performance appraisal systems if they think the system may lead to dismissal, demotion or loss of job. Therefore the school positive perception by the principals in public secondary schools in Kiambu County that the TPAD system facilitates job promotion and career growth enhances their willingness and readiness to adopt the system.

Interviews with the TSC sub county directors revealed that results of the appraisal submitted to TSC form the basis of promotion among secondary school teachers. According to the directors, teachers with high scores in the performance competence areas indicated in **Table 4.8: Performance Competence Areas** and are able to fully meet or exceed set targets as indicated in **Table 4.9: Teachers Rating Scale** are the one who get promoted. Therefore ability of the system to enhance promotions and facilitate career growth fosters positive perceptions among school principals.

A study by Kageema and Irungu (2018) revealed that teachers had a negative perception attitude towards the TPAD appraisal system as a result of the demerits accruing out of the system. Secondary schools teachers felt that teacher appraisals are unfavourable to teachers as the TPAD appraisal lacks a mainstreaming policy on promotions and transfers. Owuonda *et al.*, (2020) on the other hand revealed that majority (91.6%) of the principals felt that teachers performance appraisal were unnecessary wasteful of their time as they was no reward attached to the process and 75.5% feared that they could be dismissed if the appraisal outcomes revealed that they underperformed.

4.7 Adoption of the Digital Teacher Performance Appraisal System

The study also sought to determine ability of the school principals to appraise teachers using the online system. The principals were therefore required to indicate the extent to which they had used the online system had to appraise teachers as shown in Table 4.15:

Table 4.14: Adoption of the Digital Teacher Performance Appraisal System

Statement	Minimum	Maximum	Mean	Std. Dev
I am able to evaluate all the teachers in my school using TPAD evaluation tool as per the school TPAD calendar	1.00	5.00	4.974	.320
I am able to hold appraisal target setting meetings at the beginning of each term with teachers to agree on the performance targets for the term and set deadlines for meeting these targets as per the school TPAD calendar	2.00	5.00	4.673	.937
I am able to continuously monitor and track the appraisal process during the term	2.00	5.00	4.750	.831
I am able to provide performance appraisal feedback to teachers in terms of how they have performed and areas of improvement	1.00	4.00	2.615	1.679
I am able to submit termly performance appraisal reports to the TSC sub county director as required	4.00	5.00	4.935	.245
Aggregate Mean & Standard Deviation			4.389	0.802

An aggregate mean of 4.389 in Table 4.14 indicates that the school principals agreed that they had successfully adopted the TPAD system in appraising teachers in their respective schools. A lower standard deviation of 0.802 indicates that the individual responses on average are 0.8 points away from the mean. This implies that the data sets are closely clustered around the mean.

The principals strongly agreed that they are able to evaluate all the teachers in their school using TPAD evaluation tool (Mean=4.974; Std. Dev. =0.320); to hold appraisal target setting meetings at the beginning of each term with teachers to agree on the performance targets for the term and set deadlines for meeting these targets as per the school TPAD calendar (Mean=4.673; Std. Dev. =0.937); to continuously monitor and track the appraisal process (Mean=4.750; Std. Dev. =0.831); and submit termly performance appraisal reports to the TSC sub county director (Mean=4.935; Std. Dev. =0.245). However they disagreed that they are able to provide performance appraisal feedback to teachers in terms of how they have performed and areas of improvement (Mean=2.615; Std. Dev. =1.679).

This implies that principals in public secondary schools are able to undertake their responsibilities under the TPAD system overseeing the appraisal of teachers however they do not provide feedback to the teachers on their performance and the areas that they need to improve. The school principals are able to appraise all teachers; hold appraisal target setting meetings; monitor the appraisal process during the term; and submit performance appraisal reports on time to the TSC sub county directors. These findings are similar to those by Khatete and Macharia (2020) which established that appraisers did not provide feedback to teachers.

Interviews with the TSC sub county directors revealed that even though the number of principals who submitted their appraisal reports on time was small in the early phases,

submission of appraisals reports by principals in public secondary schools in Kiambu County has greatly improved over time. According to one of the directors,

“Principals have to a great extent embraced the online appraisal system. Compared to the early phases when the system was launched the head teachers have made great strides. About 85% of the school principals are able to submit their appraisal reports in third term compared to 70% in second term and 50% in first term.” KII#1TSC Sub County Director

These sentiments were reiterated by another director who observed that.

“Majority of the principals are now conversant with the online system and are able to submit their appraisal reports on time compared to when they started using the system. However they are few cases where some of the principals do not submit their reports according to the TPAD school calendar.” KII#4TSC Sub County Director

Machio (2017) observes that whilst majority of public secondary school principals conduct appraisals, they are ineffective in conducting teachers’ appraisal resulting in appraisal reports not addressing teachers’ needs. Findings of this study on principals knowledge and understanding of the TPAD system revealed that whilst the principals in public secondary schools in Kiambu County are aware of their role in evaluating teachers; the procedure to follow when evaluating teachers; and the professional competencies to examine when appraising teachers, their limited knowledge on the performance competence areas and the rating scale may adversely affect their ability to produce appraisal reports that accurately reflect the teacher’s performance.

4.8 Correlation Analysis

Pearson product moment correlation coefficient was used to determine the correlation between principals training; ICT resources; Principals perceptions and Adoption of the Digital Teacher Appraisal System as indicated in Table 4.15:

Table 4.15: Correlations Analysis

		Adoption of the Digital Teacher Appraisal System	Principals Training	ICT Resources	Principals Perceptions
Adoption of the Digital Teacher Appraisal System	Pearson Correlation	1	.700**	.597**	.720**
	Sig. (2-tailed)		.000	.000	.000
	N	156	156	156	156
Principals Training	Pearson Correlation	.700**	1		
	Sig. (2-tailed)	.000			
	N	156	156		
ICT Resources	Pearson Correlation	.597**	.593**	1	
	Sig. (2-tailed)	.000	.000		
	N	156	156	156	
Principals Perceptions	Pearson Correlation	.720**	.510**	.549**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	156	156	156	156

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

*****. Correlation is significant at the 0.05 level (2-tailed).

Table 4.15 indicates the correlation between study variables based on Pearson correlation coefficient. There is a very strong positive relationship between principals training and adoption of the digital teacher appraisal system ($r = 0.700$; p value =0.000). There is a very strong positive relationship between ICT resources and adoption of the digital teacher appraisal system ($r = 0.597$; p value =0.000). There is a very strong positive relationship between principals perceptions of the TPAD system and adoption of the digital teacher appraisal system ($r = 0.720$; p value =0.000). Given that all the p values are less than 0.05 (significant level, used) it can be concluded that the principals preparedness has a significant correlation with adoption of the digital teacher appraisal system.

4.9 Regression Analysis

Regression analysis was used to determine the significance of the correlation between principal's preparedness and adoption of the digital Teacher appraisal system as indicated in the subsequent subsections:

4.9.1 Model Summary

The model summary measures the proportion of variability in the dependent variable as explained by the regression line. It measures the extent to which principal's preparedness influences adoption of the digital teacher performance appraisal system as indicated in Table 4.16:

Table 4.16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.812 ^a	.659	.652	.27464

a. Predictors: (Constant), Principals Training, ICT Resources, Principals Perceptions

The results of coefficient of determination in Table 4.16 indicate that the value of R square is 0.659 which is adjusted to 0.652. This represents proportion of variance in the adoption of the digital teacher appraisal system as explained principal's preparedness. This implies that principals training; ICT resources; and principals' perceptions towards the TPAD system account for 65.9% variation in adoption of the digital teacher appraisal system. The remaining 34.1% is accounted by other factors.

4.9.2 Analysis of Variance

One way Analysis of Variance was used to determine the significance of the regression model as shown in Table 4.17:

Table 4.17: Analysis of Variance (ANOVAa)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	22.143	3	7.381	97.857	.000 ^b
	Residual	11.465	153	.075		
	Total	33.608	156			

a. Dependent Variable: Adoption of the Digital Teacher Appraisal System

b. Predictors: (Constant), Principals Training, ICT Resources, Principals Perceptions

Table 4.17 shows that the significance of the regression model is 0.000 and the value of F statistics is 97.857. The significance of the regression model is less than the significance level of 0.05 implying that the regression model was statistically significant and a good fit. Therefore principal's preparedness has a significant effect on Adoption of the Digital Teacher Appraisal System.

4.9.3 Co-Efficient of Correlation

Multiple regression model was used to determine the significance of the correlation between principal's preparedness and Aadoption of the Digital Teacher Appraisal System as indicated in Table 4.18:

Table 4.18: Coefficients of Correlation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.076	.596		8.522	.000
	Principals Training	.720	.118	.527	10.255	.000
	ICT Resources	.812	.094	.511	8.653	.000
	Principals Perceptions	.690	.051	.207	3.756	.000

a. Dependent Variable: Adoption of the Digital Teacher Appraisal System

The following regression equation can be derived based on the co-efficient of correlation in Table 4.18:

Adoption of the Digital Teacher Appraisal System=5.076+0.720* Principals Training+0.812* ICT Resources+0.690* Principals Perceptions

$$Y = 5.076 + 0.720X_1 + 0.812X_2 + 0.690X_3 + e$$

The regression equation above demonstrates the Co-efficient of correlation of the regression equation. While holding all the independent variables constant, at zero Adoption of the Digital Teacher Appraisal =5.076. An increase in Principals training by 1 unit while holding ICT Resources and Principals Perceptions constant leads to an increase in Adoption of the Digital Teacher Appraisal by 0.720, ($p=0.000 < 0.05$). An increase in ICT resources by 1 unit while holding Principals training and Principals Perceptions constant leads to an increase in Adoption of the Digital Teacher Appraisal by 0.812, ($p=0.000 < 0.05$). An increase in Principals perceptions by 1 unit while holding ICT Resources and Principals training constant leads to an increase in Adoption of the Digital Teacher Appraisal by 0.690 ($p=0.000 < 0.05$).

Therefore it can be inferred that at 5% significance level and a confidence level of 95%, Principals training, ICT resources and Principals perceptions have a positive and significant effect on Adoption of the Digital Teacher Appraisal.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary and discussion of the findings based on the objectives of the study, conclusions drawn, policy recommendations and recommendations for the research.

5.2 Summary of the Findings

This section presents a summary of the findings as per the five objectives of the study:

5.2.1 Influence of Principals Training on Adoption of the TPAD System

This study found out that 92.9% of principals in public secondary schools in Kiambu County had undergone 3 day training in 2021 on the digital teacher appraisal system as part of the preparation to familiarize with the TPAD system prior to its adoption and utilization in appraising teachers. However the limited period of 3 days when the training was conducted may not have been sufficient to adequately prepare the school principals to use the system in appraising teachers.

The training equipped the school principals with knowledge of their role in appraising teachers under the TPAD system and procedures for appraising teachers and key area for assessing teachers' professionalism. All the principals (100%) indicated that they were trained on their roles in appraising the teachers using the digital appraisal system; 87.8% indicated that they were trained on performance appraisal procedures; and 85.2% received training on the professional teaching standards. However the training did not adequately cover all the critical

aspects required to prepare the principals in the adoption of the system as the training did not equip the school principals with knowledge on performance competence areas used to evaluate teachers and the rating scale used to rate teachers' performance. Only 62.8% indicated that they were trained on performance evaluation criteria; and only 25% received training on the evaluation rating.

Lack of a comprehensive training on performance evaluation criteria and evaluation rating adversely affected principals understanding of performance competence areas and rating scale used to rate teachers performance. Only a quarter of the school principals in public schools in Kiambu have an understanding of the performance competency areas used to evaluate teachers. Only 25.0%) were able to identify all of the seven performance competence areas used to evaluate teachers under the TPAD System. Three quarters of the principals have limited knowledge and understanding of the key performance competence areas as 37.8% were only able to identify 3 performance competence areas; and 37.2% did not have an idea of what the performance competence areas were. The study further found out that only 25.0% of the principals were able to indicate the appropriate rating scale; 58 (37.2%) indicated the wrong rating scale with some inverting the scale and confused the scale with ranking; and 59 (37.8%) did not have an idea of what the rating scale was.

5.2.2 Influence of Provision of ICT Resources on Adoption of the TPAD System

The study found out that principals in public secondary schools in Kiambu County had access to all the ICT resources required to adopt the TPAD system in the appraisal of teachers. All the principals (100%) in public secondary schools in Kiambu County have the access to laptops or desktops that were provided by the ministry of education under the ministry economic stimulus

program; computer for schools programme and other donations as part of the ministries strategy to enhance ICT integration in Education. All the school principals (100%) indicated that their schools have electricity for powering the desktop or charging laptops used in the online appraisal systems. However, power interruptions occasioned by frequent power blackouts present a major challenge on the reliability of electricity as a source of power.

The principals strongly are provided with technical support from County ICT officers and from fellow teachers who conversant with ICT systems to address technical issues that may arise in the use of the system, such as software installation; software updates and upgrades; and security maintenance. The principals have access to a reliable internet provider with sufficient bandwidth to conduct online teacher appraisals. The principals use different mode of connectivity to access the internet with 82.1% of the school principals use Wi-Fi for the internet; 75.0% use mobile phone hotspot/tethering; and 37.8% use broadband internet connection from mobile phone service providers. The principals have the appropriate software (internet browser) for accessing the TPAD website/portal for purposes of conducting teacher appraisal.

5.2.3 Influence of Principals Perceptions on Adoption of the TPAD System

The study found out that principals' perceptions towards the TPAD system influenced their preparedness in adopting online appraisal systems to appraise teachers. The principals' readiness and willingness to adopt online appraisal systems was influenced by their perception towards the system. The principals were ready and willing to adopt the online appraisal system if the system improved their efficiency in appraising teachers; if they find it easy to use in appraising teachers; provides feedback that contributes to teachers' professional development; and facilitates job promotions and career growth.

Principals in public secondary schools in Kiambu County have a positive perception of the TPAD system as being accurate and more efficient in appraising teachers which increase their willingness and readiness to adopt the online appraisal system. Principals' positive perception that the TPAD system facilitates job promotion and career growth enhances their willingness and readiness to adopt the system. However, the principals encounter difficulties when using the TPAD system as the short training period of 3 days may not have been adequately trained the principals on how to use the system. Principals in public secondary schools in Kiambu county do not provide feedback to teachers on how they have performed and the areas they need to improve on to enhance their professional development.

5.2.4 Adoption of the TPAD System in Public Secondary Schools in Kiambu County

The study found out that school principals agreed that they had successfully adopted the TPAD system in appraising teachers in public secondary schools in Kiambu County. The principals are able to undertake their responsibilities under the TPAD system overseeing the appraisal of teachers. The principals are able to evaluate all the teachers in their school using TPAD evaluation tool; to hold appraisal target setting meetings at the beginning of each term with teachers: continuously monitor and track the appraisal process; and submit termly performance appraisal reports to the TSC sub county director on time. However the principals' limited knowledge and understanding on the performance competence areas and the rating scale may adversely affect their ability to produce appraisal reports that accurately reflect the teacher's performance.

5.3 Conclusions of the Study

A substantial majority of the principals received training in preparation for the adoption of TPAD system. The training equipped the principals with knowledge on their responsibility in the online appraisal of teachers; the evaluation procedures and the professional standards for evaluating teachers' performance. However performance competence areas used to assess teachers' performance and performance rating were not adequately covered resulting in limited understanding of the key performance competence areas among the principals and confusion of the rating scale with a ranking scale.

Principals in public secondary schools in Kiambu County had access to all the ICT resources required to adopt the TPAD system in the appraisal of teachers. They have access to laptops/desktops that are connected to a reliable source of internet; they have access to electricity for powering the desktop or charging laptops used in the online appraisal systems; internet browser for accessing the TPAD portal and are provided with technical support to address ant technical issues that may arise as they use the online appraisal system.

Principals' perceptions towards the TPAD system influenced their preparedness in adopting online appraisal systems to appraise teachers. Principals' positive perception of the TPAD system as being accurate and more efficient in appraising teachers and the TPAD system facilitation of job promotion and career growth enhances their willingness and readiness to adopt the system. However difficulties encountered when using the TPAD system and lack of performance feedback to teachers caused negative perceptions of the system.

Principals had successfully adopted the TPAD system in appraising teachers in public secondary schools in Kiambu County. The principals are able to undertake their responsibilities under the TPAD system overseeing the appraisal of teachers. However the principals' limited

knowledge and understanding on the performance competence areas and the rating scale may adversely affect their ability to produce appraisal reports that accurately reflect the teacher's performance.

5.4 Recommendations of the Study

This study recommends that:

1. The Teachers Service Commission (TSC) organizes a second training that will comprehensively and extensively cover all the critical aspects required to equip the principals with skills on how to use the TPAD system to evaluate teachers.
2. In addition to the training on how to use the online appraisal system, principals require additional training to enhance their level of ICT competency as most of the school principals still encounter challenges using the system despite having all the ICT resources.
3. TSC needs to provide feedback to the teachers on how they have performed and the areas that they need to improve on to enhance their professional Development.
4. TSC to provide training to teachers to enhance their skills and competence in areas identified as requiring improvement during the appraisal process.

5.5 Recommendations for Further Research

1. There is need to assess the influence of Principals preparedness on adoption of Digital Teacher Performance Appraisal Tool among private secondary schools.
2. There is need to evaluate the effectiveness of the online teacher performance appraisal system in enhancing teachers professional development
3. There is also need to assess the effectiveness of the online teacher performance appraisal system in enhancing quality of learning/education among secondary schools

REFERENCES

- Al-Kiyumi, A. & Hammad, W. (2019). Preparing Instructional Supervisors for Educational Change: Empirical Evidence from the Sultanate of Oman. *International Journal of Leadership in Education*, 22(1): 1-13.
- Anindya, S. & Majumder, S. (2017). Impact of Information Technology On Performance Appraisal. *International Research Journal of Human Resources and Social Sciences*, Vol. 4 (6): 81-89.
- Anido, C.I. (2021). *Online Teaching Performance Evaluation System: A Tool for Quality Education*. Manila, Philippines: Unpublished Thesis: Far Eastern University
- Anyonje, F.M.W. (2015). *Preparedness for adoption of information communication and technology in instruction in secondary schools in Bungoma County, Kenya*. Unpublished Thesis: Moi University.
- Baosheng, Q. (2017). Online Teaching Evaluation System Design and Implementation. *Advances in Social Science, Education and Humanities Research*, Volume 96: 750-755.
- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Etikan, I., Musa, S. A. & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, Vol 5(1):1-4.
- Ghavifekr, S. & Rosdy, W.A. (2016). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science*, 1(2), 175-191.
- Gakime, R. G. (2016). *Factors Influencing Integration of Digital Resources in Science Teaching and Learning in Secondary Schools of Murang'a County-Kenya*. Unpublished Thesis: Kenyatta University.
- Kagema, J. & Irungu, C. (2018). An analysis of teacher performance appraisals and their influence on teacher performance in secondary schools in Kenya. *International Journal of Education*, 11(1): 93-98.

- Khatete and Macharia (2020). Monitoring and evaluation of teacher effectiveness: A case of teacher performance appraisal and development tool in public secondary schools in Nyandarua South Sub-County, Kenya. *Advances in Social Sciences Research Journal*, 7(1): 320-329.
- Machio, J. (2017). *Teacher appraisal system in crisis*. Retrieved on March 14, 2022 from: <https://educationnews.co.ke/2017/04/10/teacher-appraisal-system-in-crisis>.
- Maharaj, S. (2017). Administrators' Views on Teacher Evaluation: Examining Ontario's Teacher Performance Appraisal. *Canadian Journal of Educational Administration and Policy*, Vol 14 (152): 1-58.
- Ministry of Education. (2018). *The specialized centre for professional training of teachers' guide*. Sultanate of Oman: Ministry of Education.
- Mirado, B.D. (2019). Perceived effectiveness of teachers' performance appraisal system in government owned secondary schools of Sidama Zone, Ethiopia. *Journal of Education and Practice*, 10(10):1-11.
- Mutuku, N.M. & Ogutu, J. (2018). An investigation of the factors influencing the integration of ICT in teaching and learning process in public secondary schools in Machakos County, Kenya. *International Journal of Economics, Commerce and Management* Vol 6 (4): 418-441.
- Muriuki, J.M. (2017). *Factors affecting of ICT education in public primary schools in Kajiado North sub County in Kenya*. Unpublished Master's Thesis: University of Nairobi.
- OECD (2019). *Creating effective teaching and learning environments: Results from Teaching and Learning International Survey*. Paris: Organization for Economic Cooperation and Development. .
- Omariba, A., Ondigi, S.R. & Ayot, H. O. (2015). Perspectives on Tutors' Preparedness and Adoption of ICT in Public Teacher Training Colleges in Kenya. *Proceedings of the ICE* : 344-354.
- Owuor, J. D., & Jonyo, O.B. (2017). Performance management in Kenyan public schools: Implications and challenges. *European Journal of Educational Social Sciences*, 4(3): 19-32.

- Owuonda, O.O., Odera, F. & Odhiambo, R. (2020). Teachers Attitude towards Teacher Performance Appraisal policy to Public Secondary School s' Academic Achievement in Homa Bay County, Kenya. *International Journal of Education and Research* Vol. 8 (8): 25-54.
- Oyaro, C. (2016). *Factors Influencing Teachers' Attitudes Towards Performance Appraisal In Public Secondary Schools In Imenti North Sub County, Kenya*. Unpublished Thesis: The University of Nairobi.
- Prabhat, P. & Mishra, M.P. (2015). *Research Methodology: Tools and Techniques*. Romania: Bridge Center Publications.
- Sayeduddin, S., & Vijayakumar, T. (2018). A study on attitude of teachers towards performance appraisal in private higher secondary schools in Kanchipuram district. *International Journal of Mechanical Engineering and Technology*, 9(9): 114-121.
- Tumusiime, P., Mwalw'a, S. & Okemasisi, K. (2021). Principals' Implementation Of Teacher Performance Appraisal And Development (TPAD) Tool And Teachers' Performance In Public Secondary Schools In Kikuyu Constituency. *African Journal of Emerging Issues*, Vol 3 (4):1-22.
- Venkatesh, V., Morris, M. G., Davis G. B., & Davis F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27 (3): 425-478.

APPENDICES

APPENDIX I: TRANSMITTAL LETTER

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: REQUEST FOR ASSISTANCE WITH DATA COLLECTION

My name is **Rose Katunge Muema**. I am a student at KCA University pursuing a Masters degree in Education.

I am carrying out a research to assess the **Influence of Principals Preparedness on Adoption of Digital Teacher Performance Appraisal Tool in Public Secondary Schools in Kiambu County** in a partial fulfilment of the requirements for the conferment of the Masters Degree.

You have been selected to form part of the study and hereby request for your assistance in filling the attached questionnaire. This research is purely for academic purposes and information provided shall be treated with utmost confidentiality. There will be no financial compensation for participating in this study. No reference will be made to any individual(s) in the report of the study.

Your assistance in completing the questionnaire is highly appreciated.

In case of any questions, concerns or clarifications that you would like addressed, please contact me, on number 0720296209.

APPENDIX II: PRINCIPALS' QUESTIONNAIRE

Instructions: Please complete the following questionnaire appropriately (Tick on the space provided and write on the provided space where applicable).

SECTION A: BACKGROUND INFORMATION

1. Gender of the respondent
 - Male
 - Female
2. What is your education level?
 - Certificate level
 - Diploma level
 - Degree level
 - Post graduate level
3. Age Bracket
 - Below 30 years
 - 31-40 years
 - 41-50 years
 - 51 years and above
4. How many years have you worked in this School?
 - Below 5 years
 - 6-10 years
 - 11- 15 years
 - 16 years and above

SECTION B: PRICIPAL TRAINING

5. Did you undergo training on the digital teacher performance appraisal prior to its adoption in appraising teachers?
 - YES
 - NO
6. If YES Please indicate the aspects of performance appraisal that you were trained on:

	Performance Appraisal Aspect Covered	TICK
9.	Principal's roles in the teacher performance appraisal procedures	
10.	The performance appraisal procedures	
11.	Performance Evaluation criteria and rating	
12.	Performance Evaluation Rating	
13.	Professional Teaching standards	

7. Indicate the key performance competency areas/ standards against which teachers performance is assessed under the TPAD system

.....

8. Indicate the rating scale for the following rating indicators grades using Likert scale of 1-5 : where 5 = Strongly Agree, 4 = Agree, 3=Neutral, 2= Disagree and 1 = Strongly Disagree

Rating Indicator	Rating Scale
4 Teacher fully met and exceeded the targets	
5 Teacher fully met the targets	
6 Teacher met most of the targets	
7 Teacher met some of the targets	
8 Teacher did not meet the targets	

9. Indicate your level of agreement on the following statements in the influence of principal's training on the adoption of the online teachers performance appraisal tool which is measured in the Likert scale of 1-5 : where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2= Disagree and 1 = Strongly Disagree

Statement	1	2	3	4	5
Training was instrumental in the clarification of my responsibilities in overseeing the implementation of teachers' performance appraisal in the school institution.					
Training on the performance appraisal procedures enhanced my understanding of how to undertake teachers appraisal					
Training on evaluation criteria enhanced my understanding of the performance indicators and targets under the TPAD appraisal system					
Training on performance evaluation rating equipped me with skills on the rating grade, rating indicator and rating scale used to score teachers performance					
Training on the professional teaching standards was instrumental in enabling me to understand the performance competency areas for appraising teachers					

SECTION C: ICT RESOURCES

10. Indicate your accessibility to the following ICT resources for purposes of conducting online teachers performance appraisals:

ICT Resource	TICK
9 Hardware	
10 Laptops	
11 Desktops	
12 Internet Connectivity	
Mobile Phone Hotspot/tethering	
Wi-Fi	
Cable Internet Connection	
Broadband Internet Connection provided by Safaricom, Airtel, Telkom, Zuku or fibre	
Cyber Café Internet	
13 Source of Power Supply	
Electricity	
Solar power	
14 Internet Browser	
15 TPAD Portal /Website	

11. Indicate your level of agreement (by ticking) on the following statements on the influence of ICT resources on the adoption of the online teachers performance appraisal tool

Statement	1	2	3	4	5
My school has adequate laptops/ desktops for conducting the online teacher appraisal system					
I have access to a reliable internet provider with sufficient bandwidth to conduct online teacher appraisals					
I have access to a reliable source of power supply for desktops and laptops used to conduct appraisals					
I have a backup source of power in case of power interruptions/blackouts					
I have the appropriate internet browser for accessing the TPAD website/portal					
I am able to access the TPAD portal for purposes of conducting teacher appraisal					

SECTION D: PRICIPALS ICT SKILLS

12. Indicate your level of ICT skills below:

ICT SKILLS	TICK
1. Basic ICT skills (switching on the computer and turning it off, knowledge of computer hardware including keyboard, mouse, CPU and screen monitor)	
2. Intermediate ICT skills(Knowledge and use of basic computer applications such as Microsoft office (Word ,Excel and PowerPoint), Internet search engines and use of e-mail client tools)	
3. Advanced computer application skills (web navigation skills across pages and applications involving several steps using online forms)	
4. Proficient computing and programming skills (software/program installation and maintenance, web design and computer programming)	

13. Indicate your level of agreement on the following statements on the influence of Principals ICT skills on the adoption of the online teachers performance appraisal tool

Statement	1	2	3	4	5
I am able to use various internet browsers to access the TSC/TPAD website for purposes of conducting online teachers appraisal					
I am able to access the TPAD2 portal and create a TPAD account; and log in and out the account for purposes of appraising teachers					
I am able to navigate the TPAD Portal dashboard and select the performance appraisal task to be undertaken					
I am able to undertake assessment of teachers by filling the online appraisal form					
I am able to generate appraisal reports from the TPAD portal for submission to the TSC sub county director					
I require assistance of another person to be able to access the TPAD portal and conduct teacher appraisals					

**SECTION E: PRICIPALS ATTITUDE TOWARDS DIGITIAL TEACHER
PERFORMANCE APPRAISAL SYSTEMS**

14. Indicate your level of agreement on the following statements on the influence of Principals attitude on the adoption of the online teachers performance appraisal tool

Statement	1	2	3	4	5
The Online/Digital Teacher Performance Appraisal system are the most accurate and efficient way of measuring teachers performance					
The Digital teacher performance appraisal system enhances principals efficiency in conducting teachers appraisal					
The Digital teacher performance appraisal system is relatively easy to use when conducting teachers appraisal					
The Digital teacher performance appraisal system takes shorter time when conducting teachers appraisal compared to manual systems					
The Digital teacher performance appraisal system provides performance feedback that informs teachers how they performed and the improvement needed					
The Digital teacher performance appraisal system enhances teachers professional developments					
The Digital teacher performance appraisal system and facilitates job promotions and career growth					

**SECTION E: ADOPTION OF THE DIGITAL TEACHER PERFORMANCE
APPRAISAL SYSTEMS**


15. Indicate your level of agreement on the following statements on the adoption of the online teachers performance appraisal tool

Statement	1	2	3	4	5
I am able to evaluate all the teachers in my school using TPAD evaluation tool as per the school TPAD calendar					
I am able to hold appraisal target setting meetings at the beginning of each term with teachers to agree on the performance targets for the term and set deadlines for meeting these targets as per the school TPAD calendar					
I am able to continuously monitor and track the appraisal process during the term					
I am able to hold appraisal rating meetings at the end of each term with teachers to evaluate their performance for the term against the performance competency areas and rate their performance					
I am able to provide performance appraisal feedback to teachers in terms of how they have performed and areas of improvement					
I am able to submit termly performance appraisal reports to the TSC sub county director as required					

APPENDIX III: INTERVIEW SCHEDULE FOR COUNTY TSC DIRECTOR

1. How long have you served in the position of the TSC sub county director?
2. School principals require training to understand the appraisal process and how to use the TPAD tool to evaluate teachers. Did the principals in your sub county undergo training on the digital teacher performance appraisal system?
3. What aspects of the performance appraisal were covered during the training?
4. Was the training adequate to prepare the principals in apprising the teachers using the online system?
5. Successful implementation of the online/digital teacher performance appraisal requires a number of ICT resources such as laptops, desktops, reliable internet connectivity, source of power and technical support. Do schools in your sub county have access to these resources?
6. Are these resources sufficient to enable the school principals to successful conduct teachers' appraisal?
7. School Principals require certain ICT skills to effectively conduct online teacher appraisals. Do principals in your sub county have the requisite ICT skill to conduct the online appraisals?
8. Do principals in your sub county require ICT training to enhance ability to conduct online appraisals?
9. Effective implementation of the technology largely depends upon users' positive attitude toward it. How is the perception of the Digital teacher performance appraisal in your sub county?
10. Based on your experience in implementation of the Digital teacher performance appraisal in your sub county were the principals adequately prepared to adopt the system?
11. What challenges have you experienced in implementation of the system?
12. What measures would you recommend to enhance successful implementation of the system?


APPENDIX IV: RESEARCH PERMIT



 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **868380**
Date of Issue: **22/October/2022**


RESEARCH LICENSE




This is to Certify that Miss. Rose Katunge Muema of KCA University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu on the topic: INFLUENCE OF PRINCIPALS' PREPAREDNESS ON ADOPTION OF DIGITAL TEACHER PERFORMANCE APPRAISAL TOOL IN PUBLIC SECONDARY SCHOOLS IN KIAMBU COUNTY for the period ending : 22/October/2023.

License No: **NACOSTI/P/22/21328**

868380
 Applicant Identification Number


 Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code


NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions