MODERATING EFFECT OF BIOMETRIC AUTHENTICATION SYSTEM ON THE RELATIONSHIP BETWEEN TIME MANAGEMENT PRACTICES AND EMPLOYEE PERFORMANCE OF PRIVATE HOSPITALS IN UASIN GISHU COUNTY, KENYA

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A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University in Partial Fulfillment of the Requirements for the Award of Doctor of Philosophy in Business Administration (Human Resource Management)

KABARAK UNIVERSITY

NOVEMBER, 2023

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ACKNOWLEDGEMENT

I thank the almighty God for His sufficient grace. I salute all those who in one way or another contributed to completion of this work. I appreciate the efforts made by my supervisors; Prof. Ronald Chepkilot and Dr. Stanley Kipsang Kipkelwon who took their time to guide me in writing this thesis. Much thanks go to the director postgraduate studies Dr. Shitandi and all lecturers of Kabarak University school of business and economics, my parents; Mr and Mrs Richard Kandie Chelagat, Mr and Mrs Reuben Rotich Chesire, My Husband Alex Rotich Chesire and our children Natasha, Max, and Seth, for the moral support throughout this research work, May God bless you. I also wish to express sincere thanks to my friends and colleagues; Dr. Sharon Rutto, Dr. Stella Jebii, Mr. Edwin Cherop, Mr. Japeth Bengo whose input shaped this work greatly. To my data analyst, Mr. Charles Keter, Private hospitals in Uasin-Gishu County and the staff who provided information through the questionnaires and interviews, thank you so much for your assistance. My God will reward you mightily.

DEDICATION

I dedicate this research to my family members, specifically my husband Alex Rotich Chesire and children; Natasha, Max, and Seth – for their support and understanding during the time of my studies. This study would not have been completed without their love and encouragement.

ABSTRACT

Employee performance has been of great focus to organizations which strive to improve their performance in the competitive business world. Poor employee performance hinders Organisation's goals attainment. The purpose of this study was to investigate the influence of time management practices (work planning, work organisation, work goal setting, and work scheduling) on employee performance and the moderating effect of biometric authentication system on the relationship between time management practices and employee performance in private hospitals in Uasin-Gishu County, Kenya. The specific objectives of the study were; to evaluate the effect of work planning on employee performance in private hospitals in Uasin-Gishu County, examine the effect of work organisation on employee performance in private hospitals in Uasin-Gishu County, analyse the effect of work goal setting on employee performance in private hospitals in Uasin-Gishu County, examine the effect of work scheduling on employee performance in private hospitals in Uasin-Gishu County and evaluate the moderating effect of Biometric authentication system on the relationship between time management practices and employee performance in private hospitals in Uasin-Gishu county, Kenya. The study was informed by Scientific Theory, Organisational Theory and the Adoption Approach model of Information and Communication Technology. The philosophical foundation of this study was in line with pragmatic approach. Anchoring on explanatory and cross-sectional research design, the study target population was 2,298 employees of 31 private hospitals in Uasin-Gishu County. Sample size of 341 employees was selected using stratified and simple random sampling technique. Data was collected using structured questionnaires and items anchored on a five-point Likert scale and an interview schedule. Data was analysed using both descriptive and inferential statistics. The hypotheses were tested using multiple regression model and Hierarchical regression for moderation. The regression results showed that work planning ($\beta = 0.438$, P=0.000, $p < 0.05$), work organisation ($\beta = 0.556$, P=0.000, $p < 0.05$), work goal setting ($\beta = 0.548$, P=0.000, $p < 0.05$), and work scheduling ($\beta = 0.578$, P=0.000, $p < 0.05$) had a positive and significant effect on employee performance. In addition, Biometric authentication system moderated the relationship between work planning ($\beta = -0.141$, P=0.000, $p < 0.05$), work Organisation ($\beta = -0.132$, $p=0.000$, $P < 0.05$), and work goal setting ($\beta = -0.155$, p=0.000, $P < 0.05$) with employee performance. It was also established that Biometric authentication system does not moderate the relationship between work scheduling and employee performance ($\beta = 0.0370$, p=0.073, $p > 0.05$). The study concluded that time management practices (work planning, work organisation, work goal setting and work scheduling) affects employee performance. These findings contribute novel insight into the influence of time management practices on employee performance. The study recommended that private hospitals needed to give higher priority to work planning, work organisation, work goal setting and work scheduling because they are crucial in enhancing employee performance. Additionally, more effort would be required to integrate biometric authentication system measures within time management practices to enhance employee performance.

Keywords: *Time Management Practices, Biometric Authentication System, Employee Performance, Private Hospitals.*

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LIST OF ABBREVIATIONS AND ACRONYMS

BAS: Biometric Authentication System

DV: Dependent Variable

ICT**:** Information and Communication Technology

IV: Independent Variable

MV: Moderating Variable

SD: Standard Deviation

SPSS: Statistical Packages for Social Sciences

TMPs: Time Management Practices

WS: Work Scheduling

CONCEPTUAL AND OPERATIONAL DEFINITION OF TERMS

Biometric Authentication System: Refers to an automated method of recognizing a person based on physiological or behavioural characteristics (Coats et al., 2007). In the study, Biometric authentication is a security process that relies on unique biological characteristics of employees to verify they are who they are while keeping behavioural traits, confirmed and authentic data in a database.

Employee Performance: Refers to how well employees carry out job related activities assigned to them regarding facilities provided and their efficiency in utilizing such (Bruce, 2010). Employee performance is defined in the study as how an employee fulfils their job duties and executes their required tasks. It refers to the effectiveness, quality, and efficiency of their output.

Hospital: Refers to an institution providing medical and surgical treatment and nursing care for patients (Schubert et al., 2012).

Hospital Employee: Refers to any individual employed by a hospital or health facility whose compensation for services performed for a hospital is reflected on the payroll records (Berberoglu, 2018). According to this study, it refers to all staff who serves patients using biometric authentication systems in private hospitals in Uasin-Gishu County.

Time Management: Refers to the use of tools and activities which help an individual manage and strategise their time effectively. Therefore, Time management in the study refers to the process of organizing and planning how to divide time between different activities.

Time Management Practices: Refers to the process of organizing and planning how to divide time between specific events or activities. According to this study, time management practices refer to strategies adopted in hospitals to increase effectiveness, productivity, and efficiency of employee, which include work planning, work organisation, work goal setting, and work scheduling and prioritisation.

Work Goal Setting: Refers to specifying the desired outcomes towards which one strives to achieve (Igbokwe – Ibeto & Egbon, 2012).

Work Organisation Refers to putting all resources into a plan to achieve a goal/objective (Ojo & Olaniyan, 2005)

Work Planning Involves developing objectives or the organisational strategic plan and looking for resources that would best be suited in achieving those goals.

Work Scheduling: Refers to ability to allocate appropriate amount of time for completing of tasks at the same time avoiding conflicts, which waste time(Competence development guide, 2003).

CHAPTER ONE

INTRODUCTION

1.1 Overview

The chapter presents details of the background to the study, statement of the problem, objectives of the study, research hypotheses, significance, limitations, and scope of the study.

1.2 Background of the Study

Employee performance and productivity are fundamental concepts in many world economies. Choundry (2009) in his study on the determinants of labour productivity, notes that African and South Asian countries, except India's performance in labour productivity, are not very encouraging. For instance, in Africa, Sub-saharan Africa experienced the lowest labour productivity compared to other regions in Africa. Organisations today are required to achieve certain performance standards by improving their performance short of which, a lot of problems will surface, including the risk of closing business. This performance relates to the firm or individual level, which sees human resource becoming the most determining factor to achieve jobs. According to Kiruja and kimencu (2020), an organisation's overall performance relies heavily on its employees' performance. Rotundo and Sackett (2012) view employee performance as the ability of an employee to perform effectively; it requires that they understand the job performance requirements and the standards they are expected to meet. Performance is divided into organisational and employee' performance (Riyanto et al., 2017).

However, job performance in many organisations is subjectively measured; that is, it is not independently measured and will depend on other factors in the work environment. Job performance is regarded as the results obtained from an employee's work (Hunter,

1986). Employees' performance is the measure of whether a person executes their job duties and responsibilities satisfactorily. Employee performance can also be defined as how well employees carry out job-related activities assigned to them regarding facilities provided and their efficiency in utilising such (Bruning & Campion, 2019).

Pradhan and Jena (2017) defined employee performance as a measure of how well an individual carries out tasks assigned to them, all dependent on a single person. They further defined performance in relation to behaviour which differentiates performance from outcomes. Outcomes result from external influences as well as an individual's outcome, which can be in the form of non-observable actions such as decisions and answers. However, performance is under an individual's control, whether it is mental or behavioral. Singh et al. (2016) notes employee performance to be the leading factor that influences an organization's success. An individual employee's productivity level benefits both the employees and the organization. According to Bandura (1997), employees who record high performance show high levels of employee performance, mastery of the job and high self-efficacy. The many rewards associated with high employee performance enhance their career opportunities (Riaz et al., 2018).

The significance of measuring performance is cited by Haden (2013), who states that it should be conducted as an ongoing process. The author adds that performance evaluation should entail all the aspects of employee achievements and work ethics. Multiple tools for measuring performance have been developed, and businesses have the liberty of choosing the one that suits their needs. However, the 2014 Global Assessment Report points out that organisations use either talent metrics or objective metrics to track performance.

Rachel (2016) suggests five metrics for measuring an employee's performance and that, they can be measured by looking at an employee's attendance, i.e., consistency and punctuality in carrying out their duties and how helpful employees are to their colleagues and other stakeholders.

Their efficiency determines an employee's output in carrying out tasks, their initiative, and the quality of work they give. This relates employee performance to time management practices which this study seeks to address to improve organizational performance in private hospitals in Uasin-Gishu County, Kenya. Van-Looy and Afagatova (2016) defined performance indicators as a numerical value that indicates a given system's quantitative value or performance. However, performance is not only measured by quantitative means but also by qualitative indicators (Kravchenko et al., 2019). The indicator shows the level of performance favorabley indicated by the movement of the indicator in one direction, while the movement in the opposite direction is indicative of poor performance.

Success is often the repeated periodic achievement of operational goals. Choosing the right key performance indicators (KPIs) depends on what is important to the organisation and the importance of the department within an organisation which is measuring it. Performance indicators are often associated with performance improvement initiatives. Different management frameworks such as balanced score cards are used to select KPIs. Becker (2005) stated that the elements in the human resource score card are key leading indicators for success of the workforce. Key performance indicators have always been assigned to each perspective in the strategy map but are also being adapted in the entrepreneurial sector. Dawabsheh and others (2019) pointed out that there should be a direct link between the overall organizational goals and the performance indicators. Employee performance is demonstrated by

industrial peace due to minimized strikes, lockouts and malpractices that can affect productivity (Wassem et al., 2019).

The attainment of set goals is evidenced by employees' performance in an organization, reduced labour turnover, reduced absenteeism, reduced late coming and early leaving an organization (Locke & Latham, 2019). This comes as a result of employees' motivation from job descriptions which cut down boredom. According to Ahmad and others (2012), the performance of an individual's task implies the accomplishment of given activities and the set goals of the job within the available time. Classens and others (2005) propose that organizations can improve employees' performance by effectively utilising time management tools such as checklists or work plans. According to Miqdadi and others (2014), procrastination is one of the factors that deter one from work performance due to poor time management.

Performance, as well as satisfaction at work, is associated with effective management of time. Organisations that are more concerned about the job performance of each employee in their units realise increased organisational productivity in the long run. According to Oswald and others (2007) and Smith and others (2012), job performance is the most significant element in psychology research of industrial organisation and practices and a reliable variable. Job performance involves activities one performs and can be reflected in the actions the individual makes (Oswald et al., 2010). In any case, Faulkner et al. (2007), as cited in Watson and Strayer (2010), explained that performance excludes outcomes on actions of a specialty.

Usually, due to the ability of results to help in the measurement of job performance, organisations are misled to believe it can be easily tracked and quantified. The results do not depict the exact actions the individual takes, but the individual's efforts affect the overall results. Smith et al. (2012) found that individuals could not control the results of

their actions due to factors beyond their reach. Several scholars have sought to link employee performance to time management practices employed by organisations. According to Hurley and Noë (2003), performance is referred to as the persistent capacity of producing outcomes within a given period through accomplishment of each activity. Therefore, an organisation is said to achieve high performance when it excels in many areas, constantly outweighs its competitors on a productivity basis for a long period and accomplishment of work over the available time allocated to produce results.

Hence, organisations can improve their performance only through effective time management techniques, practices, skills, and strategies. According to Ahmad et al. (2012), time management entails creating awareness by an individual to be efficient and effective in managing activities. Njagi and Malel (2012), today's organisations channel most of their resources to time management because it is the factor that influences performance. Thus, the basis of employee job performance is related to good time management by the organisation. However, Classens and others (2005) noted that time management is the end of the world's revolution, little and slowly in terms of time and distance to accomplish individual activities. Also, research has it that measured job performances are influenced by time management behaviours (Macan, 1994).

Schriber and Gutek (1987) discovered a correlation between aggregate job performances to time management. Their declaration was that management of time is essential to social control performance. As indicated by Taylor, et al. (2011), the most important resource to an organisation today, regardless of how developed or successful it is, is the manpower. Employees make the organisation develop and succeed. This is why it is so significant for the organisation to review employees' performance to know those who are effective and those who aren't. Taylor et al. (2011), researched on employees'

performance and agrees it is workers' obligation to realise how well they are getting along in line with their own objectives.

Management relies on the principles of efficiency, economy, and effectiveness in measuring performance of managers. Organisations always provide managers with the vital resources they need to accomplish the objectives of the organisation. These resources include workers, skilled or unskilled, depending on the task to perform, money and materials. Efficiency moreover seeks to identify the products of the organisation in terms of quality and quantity. The economy focuses on satisfying the quest for the lowest but the appropriate cost involved in performing a task. Efficiency as a principle focuses on the quantity of raw materials used in the production of the finished or semi-finished products; while effectiveness concerns itself with the achievement of the goals, the organisation has set (Adeojo, 2012).

The destination point should be the vital motivator for the organisation as it plans the methods to use to get there. Although time management and employee performance literature are well developed and documented in developed countries, the same is scarce in developing countries like Kenya. Cross and Jiya (2020) have explained that employee performance in Northern Nigeria Noble Company Limited was low due to poor time management. Ouma (2017) examined the role of time management strategies on organizational performance, A case study of Kenya Red Cross, Kisii County and found out that Kenya Red Cross in Kisii used target setting as time planning activity and that, poor time planning resulted in failure to achieve organizational performance while Said (2017) carried out a study on assessment of time management in improving organizational performance in the bank industry, A case of Kenya Post Bank, Nairobi.

The study findings revealed that time management was not fully implemented and that some employees did not understand the value of time. Nyaberi (2015), in a study on assessment of innovative strategies on service delivery at National Hospital Insurance Fund, Nakuru established that biometric registration techniques had positive significant influence on service delivery at National Hospital Insurance Fund Nakuru branch. Additionally, Namiti (2020) carried out a study on adoption of biometric system to manage teacher's absenteeism for improvement of performance at Karuri High School in Kiambu County. The study revealed that traditional methods had many challenges in checking teachers 'attendance thus negatively influenced teacher's performance.

It recommended that biometric authentication system had a lot of benefits in terms of security, accuracy, in attendance tracking, flexibility, convenience and time saving. This study finding is in line with those of earlier scholars including that of Muluki (2017) on leveraging biometrics for access control management in learning institutions in Kenya as they both focused on accuracy and precision levels of biometric authentication system. Koech (2021) undertook a study on effect of biometric registration technique on service delivery at NHIF branches in Uasin-Gishu County, Kenya. The findings revealed a positive linear effect of biometric registration technique on service delivery. It was thus concluded that the use of biometric registration technique at NHIF enhanced easy accessibility of data and was convenient to both National Hospital Insurance Fund and the clients. It further recommended the full implementation of biometric registration technology at NHIF. This study relates to the current study as it dealt with Biometric registration and service delivery though much focus was put on data accessibility. Studies linking employee performance to time management are difficult to come by in Kenya while those carried out on biometric authentication system dwelt on system effectiveness and efficiency. Hence, this study seeks to establish the relationship between

time management and employee performance and test whether Biometric Authentication System moderates this relationship.

1.3 Statement of the Problem

Organisations worldwide are striving for success and out-competing those in the same industry. According to Barney (1991), as cited in Kisame (2016), firms can attain and sustain competitive advantage through the performance of their employees. Furthermore, an increasing number of scholars have argued that employee performance is the core of an organization's success (Singh et al., 2016; Kiruja & kimencu, 2020). Hence, it is important that business organisations strategise on ways of improving the contribution of their employees to enhance and sustain effective performance. Industries engaged in providing services, especially hospitals, experience increased competition in providing services to their customers (Sasmoko (2019). According to Mohamoud et al (2022) the quality of primary health care performance in private sector facilities in Nairobi County received a low rating from the patients.

The low ratings in performance related to a range of areas including first contact access, ongoing care, and comprehensiveness of services, community orientation and availability of a complete healthcare system. According to Simon (2012), private hospitals have, among other things, been accused of charging exorbitant fees, turning away people injured in accidents for not being able to pay fees, besides not telling the patients the full extent of the final bill before agreeing to treatment. This problem can be traced to poor performance of their employees and may result in loss of customers and business.

However, it is important to note that employee performance as manifested in employee job satisfaction, productivity, motivation, and customer satisfaction levels has been shown to be influenced by time management practices (work planning, work

organisation, goal setting and work scheduling (Sahito et al., 2016; Mohammadi & Omid, 2010; Chen & Javeri, 2005), as well as the use of biometric authentication system (BAS) (Ononiwu & Okorafor, 2012). Thus, while empirical literature indicates that both time management practices and Biometric authentication system influence employee performance, studies where BAS is used as a moderator on the perceived relationship between time management practices and employee performance remain scarce. Therefore, as part of solution to poor employee performance, this study investigates the influence of time management practices on employee performance and evaluates the moderating effect of Biometric authentication system on the perceived relationship between time management practices and employee performance in private hospitals in Uasin-Gishu County, Kenya.

1.4 Objectives of the Study

1.4.1 General Objective

This study sought to investigate the influence of time management practices on employee performance and the moderating effect of biometric authentication system on the relationship between time management practices and employee performance of private Hospitals in Uasin-Gishu County, Kenya.

1.4.2 Specific Objectives

The specific objectives are to;

i. Evaluate the influence between work planning and employee performance of private Hospitals in Uasin-Gishu County, Kenya.
ii. Examine the relationship between work organisation and employee performance of private hospitals in Uasin-Gishu County, Kenya.

iii. Analyse the influence between work goal setting and employee performance of private Hospitals in Uasin-Gishu County, Kenya.

iv. Examine the relationship between work scheduling and employee performance of private Hospitals in Uasin-Gishu County, Kenya.

v. Evaluate the moderating effect of biometric authentication system on the relationship between time management practices and employee performance of private Hospitals in Uasin-Gishu County, Kenya.

1.5 Research Hypotheses

The following research hypotheses guided the study:

Ho_1; There is no significant relationship between work planning and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

Ho_2; There is no significant relationship between work organisation and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

Ho_3; There is no significant relationship between work goal setting and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

Ho_4; There is no significant relationship between work scheduling and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

Ho_5; There is no significant moderating effect of biometric authentication system on the relationship between time management practices and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

1.6 Justification of the Study

The study has made a positive contribution to the ongoing debate on the influence of time management practices on employee performance by coming up with an empirical analysis on how the two concepts are interrelated. Currently, there are limited studies on

time management practices and employee performance in private hospitals in developing countries. The study therefore aimed at filling this gap by investigating the influence of time management practices on employee performance and establishing the moderating effect of BAS on the relationship between time management practices and employee performance in private hospitals in Uasin-Gishu County, Kenya. In addition, the study has also advanced the practical understanding of private hospital administrators and employees regarding how time could best be utilized to enhance employee performance in private hospitals. This is paramount given that private hospitals are profit-making entities.

1.7 Significance of the Study

The study findings would benefit decision-makers and planners in Kenya's private hospital sector. The findings would enable private hospitals to make informed decisions regarding using biometric authentication systems to manage time and employee performance in their institutions to enhance productivity. The study findings would also be expected to provide feedback to those who are already using the technology on its benefits. This would be useful in future consideration of biometric application in different areas of healthcare. The government of Kenya had been planning to carry out implementation of biometric systems in a few areas. The study findings thus would provide the government with insight on the dynamic and importance of time management practices and biometric authentication system on employee performance. System developers would also benefit from this research since study findings would inform them of the experiences of customers as well as performance of the systems. The recommendations would be expected to form a basis for further research on other aspects of time management practices, biometric authentication systems and employee performance.

1.8 Scope of the Study

The study sought to determine the moderating effect of biometric authentication system on the relationship between time management and employee performance in private Hospitals in Uasin-Gishu County, Kenya since it has a high number of private hospitals who have embraced the use of biometric authentication system thus provided adequate study population. The concept of time management practices was confined to work planning, work organisation, work goal setting, and work scheduling. At the same time, employee performance was limited to Employee satisfaction, employee productivity, employee motivation and customer satisfaction. The study targeted 2,298 employees, drawn from permanent employees of 31 private hospitals in Uasin-Gishu County, which made use of biometric authentication to track employee work attendance. A representative sample size of 341 employees was used in the study. The research used both structured and unstructured questionnaire with the help of research assistants to collect data from the respondents. The theories and models underpinning the study were; scientific theory, the organisation theories, and the adoption approach model of ICT. The study was carried out between January and September 2020.

1.9 Limitations and Delimitations of the Study

The study findings and conclusions would be generalized to those institutions or health facilities with the same characteristics. Some aspects that influence employee performance would be difficult to observe at once. To mitigate this limitation, a cross-sectional study was adopted in order to have a clear understanding. A self-administered questionnaire was employed in collecting data sometimes associated with the participants responding in a socially desirable manner. To mitigate this limitation, the questionnaire was anonymous. Data collection instrument consisted of Likert scale questions, which tended to limit the items to which the respondents addressed

themselves. This was overcome by collecting as many questionnaires as possible to increase the response rate. Also, the interview schedule provided open-ended questions, which gave the interviewees latitude to provide more in-depth information. Analysis of the data relied on the accuracy of the data collected; thus, a collection of inaccurate data would affect the reliability of the results.

This limitation was overcome by piloting and editing the data collected before analysis. The issue of user competence was likely to raise concerns on employees' commitment and diligence in their work performance. The researcher assured respondents of confidentiality. However, there were also restrictions on accessing respondents due to the outbreak of the COVID 19 Pandemic in the months of March 2020; hence the research took longer than had been planned as there were delays in filling the questionnaires. Further, there was limited cooperation from some hospital administrators due to fear of loss of confidential information. However, this was overcome by assuring them of confidentially and presenting a letter from Kabarak University indicating that the information they gave would only be used for academic purposes. Finally, the research findings may not reflect the status of the whole country, and therefore the findings would only be generalized to other private hospitals in other counties with caution.

1.10 Assumptions of the Study

The study assumed respondents gave honest responses indicating their opinion, feelings, and judgments on the selected variables. It was also assumed that Private hospitals in Kenya engaged in time management practices and hospital employees were conversant with time management practices within their hospitals. It was assumed that, human resource sections in private hospitals played a major role in enhancing employees' performance. The study further assumed that conditions did not change during the time

of research. It was also assumed that the research instruments collected adequate and valid data. Finally, it was assumed that there was adequate funding for the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the reviews of previous studies on the research study. It presents the theoretical review and limitations; it further presents and acknowledges the contributions made by other scholars on the influence of time management practices and employee performance in organizations. Furthermore, it contains the effect of biometric authentication system on time management and employee performance in hospitals. It also identifies the research gap and provides the way forward. The chapter also presents a conceptual framework.

2.2 Theoretical Review

In a broad sense, a theory is needed first to understand events and problems in the practical world. A second general reason for having a theory is to aid in prediction (Fajana, 2006). Dunlop (1993) stresses that theory is needed for the purpose of explaining observations and further urges that there is need to develop an integrated theory to help interpret, explain, and relate facts. According to Walter (1976), theory enables forecasting. Flaunder (1965) argues that theory is needed to pose the right questions and research to provide the correct answers, granted that a constant interplay must take place between the two. Thus, the researcher anchored the work on Taylors Scientific Management theory, Fayol, and Weber's organizational theories and Akerrens and Cavaye's model of information and communication technology.

2.2.1 Taylor's Scientific Theory (1947)

The scientific management theory of Fredrick Winslow Taylor is considered relevant in examining time management practices. The scientific management theory is

advancement on how to make workers maximise the use of time in a workplace. The scientific management theory of Fredrick Winslow Taylor started as far back as 1947 was later adapted by Dibie and Dibie (2014), Maduabum and Gayya (2004). The scientific management knowledge was aimed at the workers' physical capabilities, especially with regards to time and motion study, on the other hand, and reward for workers and time limit for payment of workers on the other hand. In order to determine efficient use of time at work, Fredrick Taylor undertook a series of studies of the motion used in each one. Taylor, in his study on scientific management, breaks jobs into different units assigning specific time to complete each unit of the job. He arrived at the total time necessary to complete the job by totalling the unit time and adding allowances for brief rest and unavoidable delays. Taylor studied the motions and the tools employed to learn how shorter motions could be used to accomplish the job. These were to be reduced to laws and rules for workers to follow. He carried out the time and motion study to save workers energy to accomplish tasks. Taylor, in his research, concluded that with proper time management, tasks assigned to workers can be completed. Prior to Taylor's time and motion study, output and productivity were not measured. Management solely depended on the initiative to accomplish a particular task (Igbokwe-Ibeto & Egbon, 2012; Maduabum & Gayya, 2004). Yet management of time alone without regard to employee output may not translate to performance.

However, Adebisi (2013) argued that industrial revolution popularised the use of machines in factories and electricity, rendering the idea of daylight hour insignificant. The mechanical clock's invention further made it possible to manage time more effectively. This development was further strengthened as a result of the shift from agrarian to industrial economies and the popularization of the perception of scholars and use of modern technology. While Nayab (2011) opined that the cause of inefficiency

was due to workers' tendencies to work slowly and a lack of incentives to work fast. He advocated for the establishment of specific work targets and payment of workers for the tasks and goals attained. This mandated better time usage and became the basis for modern time management approaches (Nayab, 2011). This theory puts unnecessary pressure on employees to perform work faster as importance is given to productivity and profitability resulting in exploitation of the employees. This would make employees join trade unions and result in mistrust between management and employees. Tailors' theory also exhibited the problem of unity of command as workers reported to many bosses. This is bound to create confusion and chaos in the organization. He also gave too much importance to efficiency and did not consider the human element as workers were considered as robots which could speed up work at any cost (Galbraith, 2008).

Additionally, Tailor's theory as Mcniff et.al (2008) describes, gives too much importance to individual performance at expense of group performance. Thus, it does not embrace teamwork and it assumes that workers are motivated by financial gains while in reality; there are social needs and personal egos. Taylor wanted management to scientifically impose time and motion on workers to perform certain tasks, which invariably would assist management in measuring workers' output. This theory has significant implications in managing institutions. As such, institutional managers would be well advised to create structures and systems which enhance management of time. Time management is the key to planning the hours employees spend in the workplace besides determining the effectiveness and efficiency of the employees at work. The theory is appropriate in this study as it focuses on time management and individual employee output which are the key variables of the study. It explains how private hospitals can manage time to enhance employee productivity and performance to gain competitive advantage in a competitive business world.

2.2.2 Organizational Theories of Henry Fayol (1920) and Marx Weber (1905)

Another theory for this study is based on effective management and organization principles. This is important because of its relevance to a proper organization, a requirement for time management. The theory advanced the philosophy that viewed administration as a technical problem basically concerned with the labour division and specialization of functions, the establishment of a hierarchy of authority and the span of control. Henry Fayol (1920) and Marx weber (1905), offered their perspectives on the growing interest in increasing productivity (Dibie & Dibie, 2014). The problem, as Weber indicated, was how a large organisation would function more systematically. However, bureaucracy is the management of the office or position rather than by a particular person (Parsons, 1947), as cited in AMA Journal (2007). In his bureaucratic approach, Weber identified hierarchical relationship positions based on merit, authority derived from the position, specification of job responsibilities and standard operating procedures. Weber believed that for proper organization of activities to occur in a workplace, there should be an authority with the power to hold people accountable for their actions and make decisions regarding the use of organizational resources.

In a bureaucracy, people should occupy positions for their performance, not their social standing. However, social networks still affect some organizations where personal contacts and relations, not job-related skills, influence hiring and performance decisions. Weber (1905) also wanted managers to create a well-defined system of rules, standard operating procedures, and norms to control an organization's behaviour effectively. Standard Operating Procedures (SOPs) are specific sets of written instructions about performing certain aspects of a task. Weber argued that if bureaucratic principles are put in place in an organization, time at the workplace will be managed effectively.

Henry Fayol's Principle of Management, advocated division of labour, which leads to job specialization and increased efficiency. This is a potentially good practice for organizations whose workers deal with highly technical or repetitive tasks. He also preached unity of command in an organization. For example, only one superior should give orders to an employee. This leads to fewer opportunities for confusion or conflicting directives. Therefore, the Henry Fayol Principle of Management is appropriate if subordinate managers can interpret directions from their leaders and disseminate them to their subordinates. Unity of Direction in a workplace is another principle of Fayol. He argued that an organization should have a single plan of action to guide managers and workers. An organization that does not have a single purpose and plan becomes inefficient and unfocused.

Therefore, if managers and workers have different focus or directions, not all the organization's resources would be utilized to achieve its legitimate goals (Maduabum & Gayya, 2004). According to Fayol, discipline and order always maximize organizational efficiency through doing the right thing at the right time. The attraction of this approach, with special emphasis on time management, is its participatory approach to organization activities in the workplace. As a result, the workers are emotionally and mentally involved in applying themselves to official activities. This is the basis of commitment, which underscores efficiency. Service delivery in the public sector is measured in terms of effectiveness and efficiency; hence, the theory of effectiveness and efficiency is relevant to the management of time and employee performance, which the study investigates.

The theory of efficiency refers to the relationship between goods and services produced; and the resources used to produce them. According to Galbraith and Jones (1976), the ratio between input and effective time management will help manipulate the input-output ratio to the organization's advantage. Note that production or service delivery time is an important input factor. An efficient operation produces maximum output as well as minimum input for any given quantity and quality of a product. However, some scholars have opined that proper time management can improve the maximum output or reduces the minimum cost of input for a given quality and quantity of products and services. According to Mclean (2011), Fayol's theory is too formal and rigid that it can hardly be applied to informal organizations. Workers are treated as mechanical tools whose concern is to follow orders.

Modern management though, view workers as humans who require freedom to take part in decision making as it would be practically impossible to control workers movements entirely. This theory is more effective in stable and predictable environments. Thus, managers must consider democracy in decision making in dealing with dynamic present day informed workforce. On the other hand, weber's bureaucracy involves a lot of paperwork and too much levels of authority which result in a lot of wastage of time, effort, and money thus inefficiency as it would lead to unnecessary delays in decision making due to formalities and rules of bureaucratic organization hampering co-ordination and communication. It puts more focus on technical qualifications of employees rather than dedication and commitment to work (Mclean 2011).

Despite the limitations stated, these theories play a critical role in shaping organizations structures and systems in order to enhance effectiveness and efficiency. Effectiveness is how well an activity is achieving its policy objectives. According to Speight (1970) as

cited in Eneanya (2009), an organisation is technically effective if it adequate to the demand placed on it by society. Adequacy is the competence and the capacity to deliver the expected services at a particular time. According to Eneanya (2009), effectiveness measures the extent and the rate at which goals and objectives of an organization have been achieved. This school of thought believes that the realization of an organization's effectiveness demands proper utilization of the limited time by the employees with the required skill, knowledge, and attitude.

These theories are relevant to this study as they focus on work planning, organisation, and goal setting aspects of time management to realise employee productivity and performance, which translates to overall organisational performance. The study is thus anchored on these theories as administrators in private hospitals strive to devise ways of managing time to improve employee performance and realise their goals and objectives.

2.2.3 The Adoption Approach Model of ICT (1999)

This model explains the adoption mode of different individuals and users of technology. There exist diverse factors that influence the users when presented with new technology. These factors (Van Akkeren & Cavaye, 1999) influence their decisions about how and when they will use it. This includes but is not limited to perceived usefulness and ease of use. The technology acceptance model (TAM) has not influenced or controlled behaviour. However, other factors, which may be economical, external suppliers, customers, and competitors, have not been considered by TAM (Van Akkeren & Cavaye, 1999).

Other adoption factors are considered to include but are not limited to ICT knowledge, the organisation's structural sophistication, and its interaction in business decision processes, assertiveness level, organisational size, rationality, and sector. This

model, however, has several limitations as it excludes perception and attitudes on adoption influence though it approves of the managerial and business characteristics. Therefore, this study seeks to establish the impact of biometric authentication system technology on employee performance and the adoption rate by health practitioners enhance effectiveness and efficiency in private hospitals.

2.3 Empirical Literature Review

2.3.1 Employee Performance

According to Jamshidi and others (2011), performance refers to the distinctiveness of a person's achievement in his task. In private hospitals, it involves individual's output, for example, the number of customers and patients that have received services or several units sold against the set performance (AI Kazemi & Ali, 2002).

Winarno (2008) defines performance as "something that is done or the products or services produced or provided by a person or group of people". Performance does not include the results of an employee's behaviour, but only the behaviours themselves. Performance is about behaviour or what employees do, not about what they produce or their work's outcome (Karatepe & Olugbade, 2016). Therefore, supervisors who include hospital administrators in private hospitals must manage employee performance well for organizations to accomplish their mission and goals. Consequently, performance management is a wise investment for organizations, an investment that will help them achieve their strategic goals. Aguinis (2019) explains that managing employee performance includes planning work and setting expectations, periodically rating performance in a summary fashion, monitoring and measuring performance, developing the capacity to perform, and recognizing and rewarding good performance.

Attiq et al. (2017) appreciates self-evaluation for itseffect as a motivating factor because it allows the employees in private hospitals to participate in critical decisions that impact their employment and career. Participation leads to ownership of decisions and enhances implementation of policies and objectives by the hospital employees. In addition, self-evaluations could provide insights, examples, and a more holistic assessment of performance than any other observation, often only performed for a limited amount of time (Soane et al., 2018). However, self-evaluations often suffer from over-inflated results and self-serving bias creating a tool better suited to developmental uses than for evaluative purposes (Kamaluddeen, 2020). Thus, private hospital administrators should embrace staff appraisals and ensure supervisors are involved in evaluation process to be more objective.

According to Crowley et al. (2020), people will channel their discretionary effort into their work when they believe it will have meaning and be worthwhile and appreciated. Employees will feel less motivated in anenvironment where they do not have any control over the pace or quantity of work. This issue links to work-life balance and perceptions of freedom and autonomy. It has been noticed that employees in high-pressure jobs who enjoy their work but not the constant pressure often seek parallel rewards by restricting their time on the job or even taking sabbaticals or additional time off to get proper breaks (Crowley et al., 2020).

Most of the employees spend most of their working hours at work, and the quality of work experience greatly influences the quality of their lives in general. They acknowledge that every active person would prefer to work in a good environment (Arlinghaus et al., 2019). This calls for administrators and top management in private hospitals to create a good work environment and embrace flexible work schedules for

higher employee productivity. Wanza and Nkuraru (2016) explained that performance is about employee behaviour. These authors go on to include specific actions and behaviours that are relevant and applicable to an organization's goals into the concept of performance and conclude that it is this performance that an organization will hire an employee to act and perform well. Organizational performance involves three areas: profit returns on assets, returns on investment, product market performance (sales, market share) and shareholders' total shareholder return (Alaaraj et al., 2018).

In private hospital set up, good customer service would translate to higher client base and in turn high profits thus management and employees should always offer good customer service. In most organizations, performance is managed through a balanced scorecard methodology where performance is monitored and measured in multiple dimensions such as; financial performance, customer service, social responsibility, and employee stewardship. This informs the rating of a private hospital in terms of its performance. According to Medne and Lapina (2019), performance indicators can be measured in business performance and results, market standing, innovations, productivity, physical and financial resources, profitability, manager performance and development, worker performance and public responsibility.

The key performance indicators, also known as Key Success Indicators, help an organization define and measure progress toward an organizational goal in line with the mission (Star et al., 2016); Kiruja and Kimencu (2020). Dinah et al. (2016) states that organizational performance and by extension private hospitals, can be achieved through employee performance characterized by six indicators, namely; competency measured in terms of ability to handle the assigned workload, ability to work largely unsupervised and completing the work in time with minimal errors; productivity measured in terms of

time utilization, prioritizing projects, multitasking and continuous striving to improve skills; communication skills in terms of ability to offer and accept help when needed, accept and provide constructive criticism resulting in a reduction in mistakes and misunderstandings; commitment as in taking responsibility for one's errors, taking advantage of additional training or educational opportunities cooperation in resolving conflicts before they become disruptions and professionalism exhibited by avoiding frequent absences, excessive gossiping and using company time and resources for personal projects. Management in private hospitals can ensure employees focus on their work by providing and enabling environment and resolving conflicts in time to prevent strikes, sit in and lock outs which waste time and lower employee productivity.

This is further complemented byother employee performance measures such as quantity, quality, timeliness, cost-effectiveness, creativity, adherence to policy and appraisal by managers, peers, teams, and assessment centres. The current study sought to establish time management practices and how it influences employee performance in private Hospitals in Uasin-Gishu County, Kenya, to establish ways of improving the management of employees by Hospital administrators to be competitive in the market. According to Bartuseviciene and Sakalyte 2013, performance considers quality, creation of value-added, employee satisfaction, and output interaction with the economic and social environment. However, the quality of theproduct is the determinant since the other elements such as the creation of value-added, employee satisfaction, and output interaction depend on the quality of the product. Therefore, efficiency and effectiveness can be characterized by the quantity and quality of products and services offered to patients and clients in private hospitals respectively as indicators of performance. In this study, employee performance entails the output of health service providers in private hospitals in Uasin-Gishu County, Kenya and has been measured through employee job

satisfaction, employee productivity, employee motivation and customer satisfaction.

2.3.1.1 Employee Job Satisfaction

Employee job satisfaction refers to the pleasure that an employee derives from their job (Nzuve, 2012). It is the expectations of the employee about the workplace and their attitudes toward their job.

Employee job satisfaction is how people feel about their jobs and different aspects of their jobs. It is the way in which people like (satisfaction) or dislike (dissatisfaction) their jobs. This refers to the way employees feel about their jobs in private hospitals in Uasin-Gishu county, how they are treated in their workplace influences job satisfaction. Job satisfaction can be achieved when job qualities, characteristics, context and needs of the workers come together, and the worker perceives the job as interesting and is propelled to do it at its best without being forced. According to Daft (2009), a range of variables, relating to individual, social, cultural, organizational, and environmental factors affect the level of job satisfaction. These different variables all affect the job satisfaction of individuals differently, the reason why supervisors and administrators in private hospitals in Uasin-Gishu county should be able to learn different employees so that they can be managed well to enhance their productivity. Broader approachesto job satisfaction aim to give the employee improved motivation through job enrichment, greater autonomy and authority over the planning, execution, and control of their work. It focuses on intrinsic satisfaction (Fletcher & Mullins, 2010).

A myriad of views has been expressed about the concept of job satisfaction. As such, there is a relationship between what a person wants from a job and what the job offers. Job satisfaction can be conceptualized as an assessment of one's job in terms of whether it allows the fulfilment of one's important job values, which are congruent with one's

needs. Job satisfaction by Koech (2011) is composed of an individual's reaction, attitude, or perception to work. It is made up of different sets of practices, which are very complex. In private hospitals, such practices include economic rewards, social rewards, company policy and its administration, interpersonal relationships, working conditions, achievement, and recognition. Thus, administrators in private hospitals in Uasin-Gishu County should put more effort in these practices in order to enhance staff job satisfaction. The kind of work itself, responsibility, career advancement and an individual's attitude influence satisfaction. Accordingly, this attitude is influenced by certain factors unique to the work environment, precisely the job design, job skills, work procedures and policies, work conditions, and fringe benefits. Koech (2011). Fletcher and Mullins (2010) also defined job satisfaction from the perspectives of two factors.

The first comprises intrinsic factors associated with satisfiers, such as achievement, autonomy at work, professional prestige, and development. The second is the extrinsic dimension of job satisfaction, which is related to work conditions, pay or benefits. Both aspects are connected to issues that relate to job satisfaction. Most central to these definitions is the idea that job satisfaction is presumed to be a global construct encompassing a variety of specific aspects of the job that influence a person's level of satisfaction. Some crucial characteristics of job satisfaction that emerge include benefits, promotion opportunities, working conditions, supervisor, and colleagues, and pay.

According to Koech (2011), these various factsare assumed to aggregate into an overall orientation termed job satisfaction. From the foregoing argument, job satisfaction is a function of employees' attitude to their work in private hospitals as it implies doing a job an individual enjoys, doing it well, and being suitably rewarded for one's efforts.

According to Nzuve (2012), Job satisfaction is the key ingredient that results in recognition, promotion, income, and the achievement of other goals leading to a general feeling of fulfilment. It also brings about a pleasurable emotional state that often leads to a positive work attitude for the worker becausea satisfied worker is more likely to be creative, flexible, innovative, and loyal.

In essence, job satisfaction can be said to be a product of the events and conditions that people experience in their jobs. The job satisfaction concept is closely related to motivation since motivated employees are perceived as synonymous with satisfied employees. Motivation is the totality of what prompts individual workers to strive to achieve their targets. Several theories have been propounded in support of motivation. For example, Herzberg's two-factor Motivator-Hygiene theory argues that two general independent types of factors affect job satisfaction and dissatisfaction. Koech et.al. (2014), cites that intrinsic factors are factors whose presence motivates workers to perform better and so enhance job satisfaction. These constitute factors related to the job itself, achievement, advancement, recognition for achievement and responsibility. On the other hand, hygiene or extrinsic factors operate to reduce or eliminate job dissatisfaction. Previous studies have linked job satisfaction to several positive organizational effects like reduced employee turnover, reduced absenteeism, increased employee job involvement and increased devotion to the company and organizational effectiveness. In private hospitals, these factors include but not limited to salary, supervision, interpersonal relations, working conditions, organizational policy and management, the supervisor's management style and job security (Koech, 2021) observe that affiliation to for social interaction at work with co-workers; opportunities for personal growth, recognition, autonomy, and supervision are critical factors of job satisfaction.

2.3.1.2 Employee Productivity

Employee productivity is a record of the results produced in a specific job function activity associated with organisational objectives during a specific time period (Bayley, 2010). It is the result produced by a specific individual activity or functional unit over a given period, not the employee's characteristics performing the work. Managing employee productivity in Private hospitals in Uasin-Gishu County is an integral part of the human resource management function that all managers get involved in throughout the employees' working life. Performance measurement systems are the overall set of metrics used in quantifying both the efficiency and effectiveness of action (Shepherd & Gunter, 2010). Individual performance is of importance to organisations and individuals alike. Showing high performance when accomplishing tasks results in satisfaction, feelings of self-efficacy and mastery (Bandura, 1997). Given the centrality of job performance in organisations, measurement of individual performance must capture and reflect job performance in a valid and reliable manner by the supervisors.

This can be attributed to the use of performance contracts by private hospital staff in Uasin-Gishu County in order to determine Individuals output towards realization of organizational goals and objectives. Employees differ considerably in levels of job performance which should form the basis for rewards. The performance of the highest performer exceeds the lowest performers between two to four times in jobs with low difficulty. In contrast, jobs with high difficulty have the highestperformers exceeding the lowest performers by even a greater ratio (Campbell et al., 1996). Based on abilities, knowledge, experience, and cognitive traits, employee productivity is measured in private hospitals to determine an individual's contribution to the overall organisational performance.

2.3.1.3 Employee Motivation

Employee performance depends on many factors, including performance appraisals, employee motivation, compensation, employee satisfaction, training and development, job security, organisation structure and others, but the area of research is focused only on the motivation of employees as this factor highly influences their performance. A motivated employee is responsive to the definite goals and objectives they must achieve as noted by Ramllal, (2008). Therefore, they direct their effort in that direction. Ruther fold reported that motivation enables an organisation be more successful because provoked employees are constantly looking for improved practices to do work. Getting employees to give their best work even in strenuous circumstances is one of the employees' most stable and greasy challenges, which can be made possible by motivating them. Good employee performance is essential for the organisation since an organisation's success depends upon the employee's creativity, commitment, and innovation (Ramlall, 2008). Good productivity growth and job performances are also noteworthy in stabilising our economy; by means of improved living standards, higher wages, an increase in goods available for consumption, etc. (Griffin & Gregory, 2011).

Armstrong and others (2015) add that performance is influenced by personal, work systems, and internal and external factors. Furthermore, a person's low-performance level is influenced by; lack of knowledge and skills, lack of incentives, less supportive work environments such as leadership styles and individual internal factors such as lack of motivation. On the other hand, experts such as Syafii et al. (2015); Albrecht et al. (2015); Phillips et al. (2012); Al-Sulaiti (2015); Spreitzer (1997); Spreitzer et al. (2012); Sharif *et al*. (2013); Muogbo (2013); Marghany (2015), established internal factors of individuals as a major factor affecting performance. At the same time, some of the

experts focused more on external factors as variables that affect individual performance. For example, according to Graves et al. (2013), Employee performance is a record of the work/activity achieved during a certain period. Organizations should thus focus on both intrinsic and extrinsic motivation as they are bound to influence employee performance.

2.3.1.4 Customer Satisfaction

Customer satisfaction is critical in any institution, no matter the nature of the business. This is because it helps the organization retain more customers and improve the service processes over time. It is a judgment that an item or service feature, or the item or service itself, meets the client's desires. Williams et al. (2003) notes that customers are contented and happy when they get what is promised. That is when the offer is equal to the expectations; they are satisfied, and if they get more than promised, they are delighted (Kotler & Armstrong, 1996). On the other hand, Gibson, and Gibson (2005) describes the customer as disappointed if the performance is lower than the client expected is. When customers are disappointed, it means that they are not satisfied this also means that they are likely to tell other customers of their dissatisfaction. Understanding customer satisfaction will help the decision maker design the right products for the customers. The market pays a lot of attention to customer preference, feedback, and criticism, which guides them in developing and improving products and services. Customer satisfaction acts as a gateway to earning brand loyalty. Therefore, organizations focus on ensuring that they meet and exceed the customer's expectations. Although this does not necessarily result in loyalty, it increases the chance of getting loyal customers. A satisfied customer may not necessarily shop for an alternative, which keeps the organization ahead ofthe competition.

2.4 Time Management

Using time effectively in order to achieve maximum productivity involves managing work schedules and engaging in advance planning, organizing and implementation to achieveorganizational objectives, which are necessary for sustainability of the employees and organization (Sahito et al., 2016). As time management skills (TMSs) improve, employees have been shown to experience less job stress, which can influence their quality of life significantly (Khodaveisi et al., 2003). Today, since knowledge and money are no longer sufficient in ensuring high performance, the primary factor in job success is the proper usage of time (Moghimi, 2006). Therefore, time management involves effectively controlling and planning time in order to reduce stress, which is one of the most important factors in professional success (Mancini, 2003).

Thus, to improve employee performance and motivation, TM uses goal setting, prioritizing, planning, and performance evaluation in order to make employees healthy and happy (Williams et al., 2019). Modern lives are increasingly hurried; however, to save and manage time, people want to do their work faster, eat faster, use the fastest modes of transport, sleep for less time and work till late at night, make phone calls while driving, eating food, and working in an office (Garhammer, 2002). These practices show the current perceptions of time and the importance of managing time well in organizational contexts (Palmer & Schoorman, 1999). Furthermore, Bakker (2017) states that time must be well managed to achieve organizational goals. Nevertheless, time pressures can be minimized only through proper TM, as indicated by many theoretical models and research designs seeking to manage time and create a supportive working environment (Rao, 2018).

Good intentional, time management, passion and hard work are all fundamental for achieving positive results (Wajcman, 2019). All stakeholders need to make decisions on time allocation for every activity. These decisions can determine the popularity and effectiveness of a leader, leading the institution and employees towards quality performance. Human history shows that people adopting the above fundamental rules and successfully managing their time are more successful (Yasa et al., 2019). Time is a crucial component of quantity in measuring various events and their timing to the duration of the intervals to quantify the rates of change of quantities in reality and in the conscious experience (Borgonovo et al., 2016).

A study by Tirop (2003) on factors influencing time management practices among public secondary school principals in Uasin-Gishu district, Kenya concluded that time management practices have an impact on school management and realization of individual and organizational objectives as well as creation of harmony between individual and organizational interests. Thus, ttime management is a critical asset for both organizations and professionals since it concerns the discovery and application of efficient methods of completing assignments within a specified period (Sahito et al., 2016) and at the necessary quality level. It is human nature to allocate time according to interest and comfort; thus, employees likely spend their time on easy tasks within a work organization.

Nevertheless, proper time management is the only way to develop good skills and habits to achieve success, it determines how we organize and plan how long we spend on specific activities (Faller et al., 2020). A range of techniques and tools may promote time management and skills used to manage time when accomplishing certain tasks, projects, and goals. Effective time management affects employees' productivity and

helps them to cope with stress, conflicts, and pressure more efficiently. It also helps in maintaining a healthy work-life balance and keeps employees motivated. According to Ojo and Olaniyan (2008), effective time management principles are outlined below; the first principle is Responsibility; modern management tit focuses on accountability and responsibility (Adeojo, 2012). Usually, individuals disclaim the cause of failure. Winston Churchill noted, "The price of greatness is responsibility" (Adeojo, 2012). Therefore, one could stay responsible by; being responsible for their personality, actions, what they receive, and being responsible to their leaders. The second principle is accountability and integrity; accountability and integrity focus on achieving a goal, not like planning and having the goal.

After the completion of an activity, it would serve an individual well to be responsible for recording the actual results achieved to compare with the planned results. According to Adeojo (2012), the principle of effectiveness is very important to effective time management. Most important tasks demand more attention to achieve every activity set. The tasks of more importance should be performed at the expense of the less important task. The principle sometimes referred as the forced efficiency, states that "there is never enough time to do everything, but there is always time to do the most important things". Oliver and others (2019), in a study on exploring time management skills for employee performance in Nigeria, revealed a significant positive relationship between time management effectiveness as well as utilization of resources in Nigeria Mills Company Limited. It further recommended organizations to train their employees on effective application of time management principles. Time management enables achievement of targets, goals, and objectives (Osawe, 2017). In the same vein, Arvanitis et al. (2016) describe it as a set of principles, practices and system that helps use time to accomplish what we desire. It is the art of planning, organising, scheduling, budgeting, and

evaluating when and how long it takes to perform an activity and control time rather than letting time control us.

These findings are in line with those of a study carried out by Almoumani (2020) in Petra, Jordan on Effective Time Management in improving private universities employee performance which concluded that there is an impact of effective time management (time planning, time organizing, time orientation, employee empowerment and time control on private universities). The study recommended that private universities deepen the concept of effective time management and its importance to employees by motivating them manage their time effectively and further, invent ways that can improve time management through seminars and strong management control. Similarly, Allen (2001) concluded time management strategies as: planning, allocating, setting goals, delegation, analysis of time spent, monitoring, organising, scheduling, and prioritising. This formed the basis of time management aspects addressed in this study.

2.5 Biometric Authentication System

Biometrics is the automated method of recognizing a person based on a physiological or behavioral characteristic (Jain et al., 2012). Physiological characteristics are unique identifiers since there are no two people with identical biometric measurements (Dargan & Kumar, 2020). Therefore, physiological biometrics uses physical traits, such as a fingerprint, iris, hand, or face, forrecognition. In contrast, behavioral biometrics involves the use of a behavior trait or pattern, suchas a voice, signature, or keystroke (Sharif et al., 2019). Authentication refers to the process of reliably verifying an individual's or something's identity, which involves determining whether something or someone is, in fact, who or what it is declared to be (Yan et al., 2020). According to Banerjee & Woodard (2012), Biometric authentication refers to the automated method of verifying

the identity of a living person in real-time based on a physical characteristic or personal trait. A biometric system can be either an identification system or a verification (authentication). Identification is the confirmation of one's identity using an identifier like a username while verification is confirmation or denial of identity using a verifier such as a password (Jangirala et al., 2017). In biometrics, verification involves the authentication of users in conjunction with usernames and smart cards, and this is called biometric authentication. (Cantoni et al., 2018).

While biometric identification compares an individual's biometric templates with a set of many stored profiles and finds the best match, authentication involves a one-to-one matching of an individual's live reading and his or her stored profile (Purohit & Ajmera, 2020). Identification gives the answer to the question "Who is this person", whereas authentication poses the question, "Is this person who he or she claims to be?" Authentication is typically used for positive recognition, where the aim is to prevent multiple people from using the same identity(Jain et al., 2014). Advance in technology is currently changing the face of contemporary healthcare. Technology is changing the world at warp speed and nowhere is this more evident than in healthcare settings (Indra & Urmela, 2018). There have been massive innovations in the healthcare sector to enhance healthcare procedures, cost-effectiveness, and efficiency over the past decade (Omachonu & Einspruch, 2010). Information technology (IT) has played a key role in these innovations and has seen the unfolding of biometric authentication systems in healthcare.

However, the biometric technology application in healthcare has been mainly prompted by security concerns in the areas of medical schemes and patients' medical records (Segun & Olawale, 2017). As a result, biometrics is considered a definitive and superior

method for authentication and identification of individuals (Muthukumar & Kavipriya, 2019). Biometrics technology has been surrounded by several technical, social, and legal issues that have impacted its growth. Like several emerging technologies, biometrics has been subjected to high-performanceexpectations, and some systems have proven insufficient when assessed using a combination of factors such as; usability, system error rates, robustness, user acceptance and security (Pisani et al., 2019). The technical performance in terms of speed and accuracy of recognition is key to the successful implementation of biometric systems (Jain et al., 2014). However, the fact that there is no biometric system that is free of recognition errors has been a major challenge. As a result, systems have failed as a result of technical inefficiencies. For instance, the biometric system for the Malaysian border checkpoint failed the speed test leading to lost business as tourists cancelled their visits (Foon, 2015). Such performance failures have led to resistance by many potential users as the perceived, and portrayed inadequacies may lead to adverse effects on service delivery and the entire business.

Irrespective of the area and scope of application, the effect of biometric systems has been noted to be diverse, with both negative and positive outcomes (European Community, 2005). For example, the impact of biometrics on employee performance relates to efficiency and convenience of transactions, costs of and savings in employee performance, security and safety of individuals and resources, and customer satisfaction (Jain et al., 2014). Notwithstanding the identified challenges, biometrics seems to be gaining popularity in Kenya. Increased implementations of biometric systems can demonstrate the trend towards its acceptance by several players in different sectors. Limited applications have been seen in back offices, banks and in retail stores for physical and system access control in Kenya. The Independent Electoral and Boundary Commission (IEBC) of Kenya, previously the Interim Independent Electoral

Commission (IIEC), conducted biometric voter registration and verification system, which was rolled out in the whole country, albeit with technical challenges (Mwontune, 2017). The healthcare sector has not been shut out in this. Still, unlike the banks and retail chains where the applications have been limited to employee use, healthcare providers use biometrics to authenticate their clients (Gisairo, 2016).

Health services are provided through more than 8,211 health facilities countrywide, with the public sector accounting for about 46% of these facilities (Mulumba, 2012). However, the health sector has been characterised by disparities in the distribution of health services, resource allocations, and hence unequal access to quality health services (Ndavi et al., 2009). The public health system consists of national referral hospitals, county general hospitals, district hospitals, health centres, and dispensaries, as well as private hospitals and clinics with those well-equipped facilities concentrated in urban areas. To alleviate healthcare services disparities, the government of Kenya has put in place strategies that, when fully implemented, are supposed to improve healthcare provision. Among them is the Strategic Plan for Health Information Systems (He) which guides the implementation of health countrywide HIS aimed at improving employee performance among Kenyans (Githinji et al., 2017). In addition, the HISs aims to achieve better information management, tighter resource control, and better patient care (Nkanata et al., 2018). The biometrics authentication system is the latest notable HIS innovation in healthcare.

Kenyan healthcare, like the rest of the world, has realised the cost benefits of biometrics systems when compared to the cost of medical benefits fraud, the cost of fraud prevention and the cost of mistakes that can be prevented using biometrics (Anne et al., 2020). However, despite numerous reasons for biometric application, medical scheme

fraud can be singled out as the driving force behind biometric authentication systems in the Kenyan healthcare sector (Kumar et al., 2019). It is estimated that in 2009, fraud in the medical insurance sector brought about revenue losses that were estimated at 40 per cent of total claims (Angima & Omondi, 2016). In partnership with healthcare providers, medical insurance and companies have introduced biometric authentication systems to counter this problem. The solution is designed to prevent and deter medical benefits over expenditure, sharing medical benefits with non-members, and payment of services not rendered, among other misuses of medical insurance.

However, subscribers to several medical insurances and employees of some companies, among them Standard Chartered, Barclays Bank Kenya, Union, and Provincial Insurance (UAP), AON is are issued with smart cards in which their biometric data is stored. At the time of service, the cards are inserted into a reader, and the subscriber places their fingers on a biometric scanner that verifies the identity as well as benefits entitlement to the subscriber. According to Iselin (2010), the use of smart cards in healthcare is gradually increasing. By March 2010, there were already 150,000 smart cards issued out, and there were more than 1000 points of service countrywide. Since then, more cards have been ordered from the supplier (Third Factor, 2011). However, there is a need for evaluation of this system in order to establish its impact on employee performance in health institutions. This study is grounded on this background.

2.5.1 Biometrics Application in Healthcare

Biometrics is a rapidly evolving technology and a wide variety of competing biometrics solutions do exist in the market today (Hamidi, 2019). Biometric applications are now found in diverse fields, including enterprise networks, homeland security, electronic and non-electronic banking, retail sales, law enforcement, healthcare, and social services.

Different types of biometric applications are suited for different areas of application. Like other sectors in the service industry, healthcare has realised the benefits and applicability of biometrics in the health sector. There are various reasons why the healthcare sector is turning to biometrics. However, biometrics adoption in healthcare worldwide is a fraud, which is true in both developing and developed countries (Shakil et al., 2020). Millions of dollars in medical scheme fraud are being lost every year, and health care stakeholders have gone into biometrics to prevent further losses. Private hospitals have been experiencing difficulties in patient verification, and the use of biometrics is a promising solution (Jain et al., 2014). This has facilitated matching patients to their medical scheme benefits and preventing illegal sharing of medical benefits.

Contrary to the belief that biometrics may compromise privacy, the privacy of patients' records is a major driving force for biometrics in healthcare. With the increased use of electronic records that are easily available compared to hard copies, countries are putting legislation in place to safeguard the privacy of patients. Biometric authentication is used to control access to electronic and hard copy medical records, thus ensuring individuals only access the records they are authorized to. Legislations like the Health Information Protection Act (HIPA) in the USA, which imposes stringent requirements for protecting the confidentiality of patient information and patient privacy, are pushing private hospitals to adopt biometrics to follow the requirements and new standards (Mulumba, 2012). Such legislation positively impacts the growth of biometric technology (Jain et al., 2014).

Another reason for biometrics in healthcare is risk management. Biometrics facilitates risk management by ensuring patients identification is tied into care or treatment plans and matched to the right medical records (Taylor et al., 2011). This enhances patients' safety and is being used in emergency cases where the patients may not be able to identify themselves. Finally, resources management is a reason for implementing biometrics systems in health facilities. According to Li and Jain (2014), healthcare is turning to biometrics in order to balance convenience, security, and compliance. Improving efficiency and compliance, reducing medical benefits fraud prevalent in this sector, restricting access to medical information and physical resources, and patient verification is the main reason for biometrics in healthcare.

Several competing biometric technologies are in use, and others are under development. However, considering that no one biometric technology is 100% accurate (NSTC, 2006), a few have done well and are commonly used in healthcare applications. The reason is that different types of biometric systems are more appropriate for certain contexts and operational purposes than others. Naturally, physiological biometrics have proved more reliable than behavioural as the physical traits generally stay the same all the time, whilst the ever-changing behavioural traits have more chance for error. Fingerprint Recognition is probably the most popular among the biometric technologies in all industries, including healthcare (Delac & Grgic, 2004). According to Schneider & Price (2011), fingerprints ultrasonic imaging is a breakthrough technology that delivers superior accuracy, speed, reliability, and scalability for all healthcare biometric fingerprint identification applications.

The fingerprint ultrasonic imaging technology can penetrate many materials and passes through contamination of the finger or the scanning devices. It is believed to improve accuracy in all population groups, including children and races. Early adopters of the fingerprint technology like Catholic Health in Buffalo, New York, who have been using fingerprint authentication for their patients since 2003 (Healthcare IT News, 2005), are a testimony of the success of the technology in healthcare. The same technology is in use in Angolan hospitals (M2SYS, 2010), and preliminary investigations indicate use in Kenyan private hospitals too. The negative side of fingerprint technology is that it is considered intrusive and is feared to contact communicable diseases. A relatively new technology building on fingerprints weakness is palm vein recognition. The vein technology is appealing in healthcare because users do not have to touch the scanner, thus eliminating the risk of infection (Martin & Osberg, 2007). Carolinas Healthcare is using this technology to identify patients during admission (Nelson, 2008). Their choice for this technology was driven by infection concerns and wearing out of fingerprint scanners. According to Fujitsu (2005), vein recognition is high in accuracy, with a false rejection rate of 0.01% and a nominal false acceptance rate of less than 0.01. Iris recognition is another biometric technology used in healthcare. It involves scanning and analysis of the iris of the eye using a regular video camera.

It is widely regarded as the safest, most accurate biometrics technology and capable of performing 1-to-many matches at extraordinarily high speeds without sacrificing accuracy (Jia, 2005). Glasses or contact lenses rarely impede it. Iris recognition is a highly mature technology with a proven track record in several application areas. According to Pato and Millett (2011), the failure of biometric systems is not necessarily caused by the technology applied but due to several factors related to planning and implementation. These factors include inappropriate technology choices, lack of

sensitivity touser perceptions and requirements, the presumption of a problem that does not exist, inappropriate application of biometrics where other technologies would better solve the problem, inadequate surrounding support processes and infrastructure, lack of a viable business case, and poor understanding of population issues, such as variability among those to be authenticated or identified among others.

2.5.2 Impact of Biometrics in Healthcare

The success or failure of biometric systems determines the impacts they have on the delivery of service. Biometrics is associated with operational efficiencies for identification and verification procedures (Schneider & Price, 2011). According to Bataller (2011), biometrics enables self-service and automated authentication of individuals, improving operational efficiency while assuring security. Successful biometric systems implementation with high recognition accuracy improves efficiency by shortening patients' registration process through automatic identification and insurance eligibility verification. This can lead to reduced overall waiting time for the patient, which is critical to ensuring safe and expedited treatment (M2SYS, 2010). Biometrics has the potential to improve customer service and enhance customer satisfaction across industries (Heracleous &Wirtz, 2006). Service efficiency improves customer satisfaction (Jain et al., 2014). In addition, staff productivity is increased as one staff can serve more people within a short time. On the other hand, if the processes of using biometrics are lengthy or erroneous due to system inefficiencies, the ability to deliver services to the customers could be negatively affected. This would translate to long queues resulting in frustration for the patients and staff. This would further lead to reluctance to use the system by both patients and staff, culminating in the abandonment of the system.

Medical benefits fraud is one of the main reasons for biometrics in healthcare. Biometrics can reduce fraud by verifying recipients' identities atemployee performance points, thus reducing the possibility of misuse of medical scheme benefits. It can also prevent healthcare providers from submitting false claims. This streamlines and enhances simplicity in medical scheme management. Biometric systems can improve the quality of care and safety by linking patients to their electronic medical records. This reduces medical errors, which in some cases have been fatal due to incorrect or incomplete patient records (Kulynych & Greely, 2017). The use of biometric systems has effects on the cost of employee performance. With an efficient system, the productivity of staff members increases, translating to a reduced number of staff members used to render services (Wirtz, 2019). Streamlined medical benefits management with biometrics means money is not lost to fraud. This contributes to the reduction of employee performance costs. On the other hand, an unreliable biometric system means frequent servicing and supporting the system, thus increasing system support costs. Thecosts could also be increased in cases where consultations with third parties on medical benefits must be done through other means like telephone calls.

2.5.3 Biometric Employee Clocking System and Attendance Timing

The employee clocking system is an automated biometric time clocking process that verifies workers' identities, like their personal numbers. It captures employee traits with high speed (one second or less) with high levels of accuracy and ease of enrolment (Ononiwu & Okorafor, 2012). Biometric employee clocking systems capture individual traits that are unique to an individual. These characteristics may include fingerprints, hand geometry and an individual's voice. The biometrics data is captured by specialized devices in the workplace (Schneider & Price, 2011). Effective attendance timing in the

workplace helps increase employee or workers' productivity, leading to enhanced employee performance by helping in tracking employee attendance (Ononiwu & Okorafor, 2012). Time management helps in guiding how time is managed in the workplace. The action taken to improve efficiency is guided by the principle of attendance timing (Swift, 2010). Attendance timing is crucial for individuals to match their requirements as employees in the workplace in order to manage work-life balance (Allen, 2001).

Whereas employees are expected to be in the workplace to work, they have individual commitments, which they also must attend to. An effective attendance timing system can ensure a mutual balance between an individual's time and the time required to be at the workplace. The working hours an employee is expected to put in any given month determines the pay due to the employee. The pattern of work may determine these working hours. Employees may work in the regular, shift and over time (locum) patterns. The working hours are determined based on the legal requirement, collective barraging agreements for union workers, organizational policy, and best practices in the industry, among other consideration. Biometric clocking systems may be used in two modes: identification and verification. The identity verification of a user takes place when a user logs into the system.

The biometric data presented to the system is checked against the template embedded in the biometric system. The users' total identification occurs once the computerized biometric system matches the users' data with all the records embedded in the identification database (Zhang, 2001). The process of identifying individuals in an organization is technical, costly, and challenging. Generally, the identification accuracy level reduces as a database's size increases. To increase the level of accuracy in large

databases, the databases must be categorized based on biometric data. This ensures that record identification is made within a specific category to minimize the number of records in which a search must be done. This helps increase the accuracy level (Coats et al., 2007). Before the identification, a computerized biometric employee clocking system user is expected to register into thesystem. The individual traits of the user must be captured by the system.

Data enrolment must be done in stages to create high-quality biometric templates that are eventually used to identify the users. Enrolment is the process users go through to register in thebiometric system (Coats et al., 2007). The user's biometric characteristics and the derived biometric template characteristics must be reconciled to identify a user. This is referred to as enrolment and involves the creation of data based on the user, which is subsequently maintained in the system. The user's database comprises employee details and biometric traits (Schneider & Price, 2011). User authentication involves reliable verification of the user's identity (Russ, 2000). The individual users of the biometric system must be authenticated and identified by the machine using the characteristics embedded in the biometric system database (Woodward et al. 2001). A biometric clocking system can be an authentication system or an identification system. Identification confirms one's identity using an identifier like a username. Verification is a confirmation or denial of identity using a verifier like a password. In biometrics, verification involves authenticating users with smart cards and usernames, called biometric authentication. Whereas biometric identification compares a user's biometric templates against stored profiles and finds the one that matches best, authentication deals with an individual to template matching the live reading against the stored profile (Ruggles, 2002).

2.5.4 Employee Identification

The user's biometric characteristics and the derived biometric template characteristics must be reconciled to identify a user. This is referred to as enrolment and involves the creation of a database of the user, which is subsequently maintained in the system. The user's database comprises employee details and biometric traits (Schneider & Price, 2011). User authentication involves reliable verification of the user's identity (Russ, 2000). The individual users of the biometric system must be authenticated and identified by the machine using the characteristics embedded in the biometric system database (Woodward et al. 2001). A computerised biometric clocking system can be an authentication or identification system. Identification confirms one's identity using an identifier like a username.

Verification is a confirmation or denial of identity using a verifier like a password. In biometrics, verification involves authenticating users with smart cards and usernames, called biometric authentication. Whereas biometric identification compares a user's biometric templates against stored profiles and finds the one that matches best, authentication deals with an individual to template matching the live reading against the stored profile (Ruggles, 2002). Identification responds to the question "Who is this person" while authentication asks, "Is this the person they claim to be?" Authentication is typically utilised for positive recognition, aiming to prevent multiple people from using the same identity (Omobogo, 2015).

2.6 Relationship between Time Management Practices and Employee Performance

Several studies have demonstrated statistically significant relationships between time management measures and employee performance. This study sought to establish the moderating effect of biometric authentication system on the relationship between time

management practices and employee performance among healthcare personnel in private hospitals in Uasin-Gishu County, Kenya.

2.6.1 Work Planning and Employee Performance

Planning is the key to high-performance levels and affecting not only the productivity of employees but also helps to cope with pressure more efficiently. Harahsheh (2019). It is the key process in effective time management, depending on the worth of the time available (Bindra, 2017). Without proper planning of what to do at a time, an employee cannot coordinate their activities within the limited available time. Planning involves the pattern of an act that adds the company's main goals, actionsystems and policies into a whole (Kabiru et al., 2018). Aldehayyat and Khattab (2011) noted that planning methods empower managers to convert data into valued decisions and appropriate actions. Kinemo (2020) advocates for planning to involve developing objectives or the organizational strategic plans and looking for resources best suited to achieving the organizational goals outlined in strategic plans.

Each goal should have financial and human resource projections associated with its completion to become successful. According to Bryson and Alston (2010), planning also involves developing the tracking and assessment method that will be used to monitor the project process. Planning is normally where the direction of the business is made through a multiplicity of activities comprising the making of goals. As such, management's planning function symbolizes numerous decision-making points (Schraeder & Reid, 2015). According to Daft and Marcic (2016), the third effect of planning on organizational performance is its pervasiveness. The entire managers, from every superintendent to the utmost officer, the Chief Executive Officer (CEO) of a business, are supposed to engage in planning. At the lower levels, it may be termed

operational planning and whist at the highest levels and it is termed strategic planning. The time spent in planning in any lever depends on the level type.

The CEOs may be involved more in activities such as organizing and planning, whilst heads of departments are more involved in leading people, acquiring resources in the respective departments, and controlling performance in the departments. The more efficient the plans are, the more they contribute to improved employee performance. According to Awino et al. (2012), positive change is caused by effective planning. The efficiency of plans must be aligned to add to the business's aims and promote the analysis and improvement of strategies. Koontz and O'Donnell (2011) particularly viewed that the efficiency feature must be used not only in monetary terms for numerous resources used in service and production actions but also for the group and individual gratification of human resources. Sosiawani et al. (2015) state that each dimension of strategic planning contributes to organizational performance.

Employees contribute to planning by giving suggestions and test-driving the different strategies to get the best fit in an organization's strategy, resulting in increased performance (Ramirez et al., 2017). Whenever employeesparticipate in crafting the plan development for a business, their motivation and attachmentto the project are high, thus making them more effective while running the project. However, Mirvis and Googins (2018) showed that applying strategic planning correctly would contribute to companies achieving better performance. Consequently, creating assignments with timelines considering the ability of individual employees in the completion of the task time horizon is also considered the key element of strategic planning, which can advance the performance of the business.

Mitchelmore and Rowley (2013), through their study, assert that businesses need to lengthen their time horizon of strategic planning to achieve better performance. Since enough time allocated will allow employees to work efficiently without the pressure that time is running out on them, their performance would be greatly improved. There are various implementation strategies that management in different organizations can adopt. The strategies may adopt a top-down approach where the policies and plans are developed at the top, and the information trickles down to the bottom where the instructions are carried out. Another element of strategic planning is the control of planning (Sophia & Owuor, 2015). Wagaki (2013) describes strategic planning as a continuing, never-ending, combined process demanding unceasing review and improvement.

Strategic planning is thus considered and developing, vigorous and collaborating process. To build your company to a performing level within the industry, the business has to strategies and employ strategic planning practices. These are key characteristics vital to founding and positioning the business strategy in the market (Kathama, 2012). Furthermore, strategic planning makes a business look into the future and offers an opportunity to influence the future or help in assuming a pre-emptive position (Kathama, 2012). It offers improved attentiveness to needs and the facilitation of related environmental issues. This aids in defining the general mission of the business and emphases the objectives, providing a sense of continuity and direction, which leads to effective leadership and staffing, connecting everybody into the structure and offers standardsof liability for individuals, allocated resources, and programs.

It is the key to assisting stakeholders jointly and supportively to gain control of the future and the purpose of the business (O'Regan & Ghobadian, 2002). Chletsos and Saiti

(2019) described strategic planning to entail a set of fundamental procedures envisioned to make or manipulate a situation to create more favourable outcomes for a company. This is quite different from traditional strategic planning, which is extra defensive based and contingent on the move of competition to initiate the business's move. In business, strategic planning offers complete direction for specific units such as human resources, projects, financial focuses, and marketing. Strategic planning may be favourable to productivity enhancement when there is agreement around the mission and when most work actions are contingent on technological or technical contemplations.

Planning offers a simple direction and rationale, which is formative to the focus of a business and offers the requirement against which any business may choose what to do and how to do it (Blakely & Leigh, 2013). Basically, it is a process for making and telling a better future in measurable terms and selecting the best means to achieve the anticipated outcomes. It is said that failure to plan leads to planning to fail. Thus, Abdalkrim (2013) summarised the importance of planning as being: Increase of effectiveness; developing of sustainable competitive position, developing a decent fit between the internal capabilities and external environment, and helping managers to reflect on the future repercussions of the present decisions.

According to Chletsos and Saiti (2019), having a good vision, objective, and strategy is no guarantee that the project performance will be good. The management's creative planning can help improve the project's performance outcome. Nevertheless, on the other side, without a vision, good plan, or strategy, the performance of a project is sure to fail or, at best, be poor. Planning concerns formulating methods or practical techniques to achieve planned objectives. The activities that would help in achieving desired goals are considered. Planning is the first step to take to complete the intended results. It could be

said that conceptual skills are a requisite ability for psychological aspects; the same can be said about planning, which creates the opportunity to design and maintain a plan.

Similar findings were revealed by a study conducted by Abdalkrim (2013) that performance and potentials are two separate things that make a gap in the realization of set goals; one can achieve the goals of his life when he stays committed to a plan. Everyone should cultivate the habit of effectively managing time. Plans have been categorised into four types; Operational plans, Strategic plans, Tactical plans, and Contingency plans. The tips established for effective planning include; being specific about goals, establishing attainable goals; Design time bound and quantity fox goals; associating yourself with the right company; taking a step with what you have; being honest about the course; Involvement of others in the plan by not being rigid in dealings and movement of plans to appraise results. (Abdalkrim 2013)

2.6.2 Work Organization and Employee Performance

Effective time management to take place, there must be a proper organization of activities within the workplace (Osawe, 2017). This means carrying out activities around those priorities and goals set. In this context, the absence of proper organization results in wastage of business time. According to Igbokwe- Ibeto and Egbon (2012), proper planning in an organization implies that all employees be informed about their responsibilities based on their specialization. The communication channel should be well defined to avoid wasting precious time in seeking information; managers should not seek to supervise too many people; otherwise, the wide span of control will constitute time wastage. Delegate authority, as earlier described; everything should have its place, and there should be a place to retrieve information, documents, equipment, files, or records as and where needed immediately.

Finally, there should be unity of command, whichis meant that employees should receive orders from one superior at a time to enhance employee performance, which culminates in organizational performance. The reverse brings conflict, which is a time waster, and as a superior, set daily targets, maintain a time log, and avoid attempting too much at once. The successful accomplishment of personal goals demands one to coordinate all resources at his end. Below are personal, organizational principles; priorities should be determined; priorities should be time bound; on one's schedule, there should be time created for the unplanned events; do not multi-task yourself at the same time; be productive in your performance; properly organize tasks; work according to your temperament; unattainable systems should not be developed; idle minutes should be created between major jobs and meetings, and the aims should be the main concern, not the activity.

2.6.3 Work Goal Setting and Employee Performance

Locke and Latham developed a goal-setting theory to address questions about the effect of goals on performance. This theory explains an individual's performance by looking at the goals set. Goals are "the object or aim of an action" (Latham & Locke, 2019). In other words, goals specify the desired outcomes or performance that should be realized, whereas performance refers to what is accomplished. The theory is used at the individual and team levels: a team goal concerns the outcome that is aimed for by a team. In the literature, different types of performance are distinguished: organizational results and behavioral outcomes. Performance, as measured in this study, concerns the first category, team effectiveness and efficiency as experienced by team members (Hamid et al., 2019). Effectiveness and efficiency are very common outcome measures in the private sector and are highly appreciated in the light of performance management (Van et al., 2018). Considering this study's aim, these performance forms seem relevant to examine. According to goal setting theory, an employee performs better if the goals that guide work

are clear, specific, and challenging rather than vague, ambiguous, and unchallenging (Latham & Locke, 2019; Rainey & Jung, 2015). Furthermore, the theory proposes that goals activate motivational mechanisms that stimulate performance. Four stimulating mechanisms are distinguished: direction, effort, perseverance, and strategy (Latham & Locke, 2019).

Put simply, if you know better what is expected of you, the course of action you should take to accomplish the objective becomes clearer, and the chances you will reach the goal increase. This enhanced self-efficacy through positive reinforcement and roused commitment benefits future effort and performance (Bandura, 2012). In addition, goal clarity supports employees in knowing what is expected of them and what behaviour is functional for goal achievement, lowering role ambiguity (Davis & Stazyk, 2015; Pandey & Wright, 2006). If belief in one's capacities is strong and role ambiguity is low, higher performance can be expected (Bandura, 2013; Davis & Stazyk, 2015). The effect of goal setting applies to the team level in the private and health care sectors (Michie & West, 2004). The absence of goal ambiguity and the presence of goal clarity have been found to relate to multiple positive outcomes, including performance (Rainey & Jung, 2015). The common reasoning goes that goal ambiguity increases uncertainty and thereby inhibits the motivational mechanisms of clear goals to benefit performance, although the interpretive leeway that goal ambiguity presents can be advantageous as well (Davis & Stazyk, 2015; Rainey & Jung, 2015). However, the focus of this existing work has not been on teams but organizations and individual employees. Combining insights from these streams of research informs the expectation that setting goals in private hospitals will increase employees' performance.

2.6.4 Work Scheduling and Employee Performance

A work schedule has been defined by Doyle (2020) as the expected time for an employee to be on the job and working. In many cases, the employer will determine this and will be a set number of days and hours per work. An employee's work schedule includes the times and days an employee is scheduled to be on the job. Depending on the organisation and the position, an employee's work schedule may be a traditional, 40-hour- per-week, Monday to Friday schedule or could vary daily, weekly, or seasonal. According to Doyle 2020, the organisation will determine the job's work schedule when an employer hires to fill a vacant position. Many employers assign a scheduleto their employees. The schedule may be set with predetermined hours, in which case the employee knows exactly when they will be working each week.

However, other organizations may have a flexible scheduling policy, and employers allow employees to vary their arrival and departure times and sometimes even choose the days they work. The organization may assign scheduled hours, the employee may sign up for open shifts, or the employees may be able to set their schedules. The scheduling process can be done in an old-fashioned way, in which a company manually determines its employees' work schedule on paper or using a computer spreadsheet or calendar. Larger employees use software and apps to set staff schedules. Therefore, work schedule generally refers to the days per week and the hours per day an employee is expected to be present at their job (Doyle, 2020). There are many different types of work schedules, which vary based on the position and the organization.

The schedule can alsovary based on the time of the year. For instance, there are jobs with work schedules that change seasonally. A prospective employee needs to know the work schedule for the job before accepting it. This will help the employee avoid any surprises

when they start work. Doyle (2020) describes some of the different work schedules available to employees: Full-time work schedule: A full-time work schedule often requires devotion of 37-40 hours weekly. Because of the long hours, most of the jobs with full-time schedules are eligible for employee benefits. These benefits include retirement plans, vacation and sick days, and health insurance. Full-time work schedules are usually the same shift daily; in many cases (such as retail), shifts can differ, but the number of hours will still add up to 35-40 weekly.

Full-time non-exempt workers generally receive overtime pay. This happened when the hours worked exceeded the established 40-hour maximum. Overtime is usually paid at a minimum of base hourly pay plus half of that base pay, also termed as "time and a half". This is typical for employees who are paid hourly. Exempt employees are not eligible for overtime. Therefore, most exempt employees get a salary instead of hourly pay. Part-time work schedule: This is any schedule less than full-time employment. Its benefit is that it allows greater flexibility to maintain other responsibilities outside work. However, part-time work rarely includes benefits given to full-time employees, and hours can be erratic and inconsistent weekly. A good example of a part-time work schedule could be Monday to Wednesday starting at 7:00 AM-11:00 AM and Saturday and Sunday from 11:00 AM to 7:00 PM.

Fixed work schedule: This refers to a timetable that consists of the same number of hours and days worked weekly. Fixed work schedules tend to stay compatible once the employer and the worker have agreed upon the number of hours and the days. A good example of a fixed schedule would be Monday to Friday from 8:30 AM to 5:00 PM or Thursday to Sunday from 3:00 PM-11:00 PM. Flexible Work Schedule: This work schedule is less strict than a fixed schedule. Employers and employees work together in

determining the number of hours and days of the week the employees will be working. Employees may be expected to be at work at a certain daily block of time or work a minimum number of hours. Still, shifts can often be switched with other co-workers to satisfy the employee's needs and busy life, depending on the employer's policy. Flexible work schedules can vary greatly, but an example might look like this: Monday- 9:00 AM to 12:30 PM, Tuesday to 4:00 PM, Saturday and Sunday– 2:00 PM to closing. Rotating shift work schedule: this work schedules cycle workers through the day, swing, and night shifts. This cycle helps distribute different shifts between all employees so that no one is stuck with the less desirable hours every shift.

Work schedule is not as ordinary but can be seen in several careers like the power plants, health care, roadwork jobs, military, and construction work. These shifts can cycle weekly or quarterly, depending on the required type of work. For several employees, the transition between the different schedules can be tricky. Sleep and eating patterns change, and employees may see their family and friends less because of their rotating schedules. This type of time, however, does have some benefits. Employees can spend more time with family and friends during their normal work hours and may be able to run errands they usually would not be able to complete. Hours can cycle between day shifts (7:00 AM to 3:00 PM), swing shifts (1:00 PM to 9:00 PM), and weekend, night, or overnight shifts. Before we begin, it is essential to understand that many of these work schedule types are like one another. Therefore, each term may illustrate a slight difference in hours or days worked. Because of these differences and similarities, you can combine individual work schedule types to create your unique plan. For instance, you could combine terms to develop a fixed, part-time seasonal morning shift or a full-time rotating on-call shift. However, certain skills must be employed to organise activities in a workplace properly.

The Competency Development Planning Guide (2003) identifies these skills and behaviour as prioritising activities, determining tasks and resources, scheduling work, and staying focused. Prioritising means working with others to identify more critical and less critical activities and assignments, and to coordinate project assignments and roles, and adjust priorities when appropriate (Ranängen et al., 2018). Determining tasks and resources skills involves managers breaking down project requirements into types of equipment, materials, people needed and assignments, roles, and responsibilities. Scheduling is an important skill needed by Managers to enhance the allocation of an appropriate amount of time for completing their own and others' tasks, avoiding scheduling conflicts (Gerstel & Clawson, 2018). Managers should develop milestones and prepare detailed project plans, including timelines and objectives, to enhance employee performance (Kivinen, 2020). Leveraging resources is taking advantage of available resources (individuals, processes, and tools) to complete work efficiently, coordinating with internal and external delegate duties appropriately while maintaining accountability for work, and managing resources within the short and long-range framework budget.

To create a favourable environment that facilitates effective management of time in an organisation, supervisors' duty should not be planning or delegating jobs alone but must create a conducive environment in which the employees carry out their jobs successfully (Tafvelin et al., 2019). The pickle jar is filled with sand first to get a good visual idea of how we generally complete our tasks. These are the (sometimes) meaningless duties that we let distract us daily. Next, the pebbles are placed on top of the sand; duties that need to be completed can also be done on another day, at another time, or by someone else. Finally, it is the rocks' turn; the most important tasks we must do on a particular day. These are the tasks for which someone has been hired and that fall under their responsibility. Tasks that cannot be ignored or done by someone else. But it turns out that

if the sand, pebbles, and rocks are put in the jar in this order, there is barely any room for the rocks. The same happens in our daily lives; we stuff it full of unimportant tasks, but when it matters, we don't have any time left for the important stuff (Parke et al., 2018). Dezhi Wu et al. conducted a research study on the knowledge workers" individual time management practices. Based on the qualitative analysis, the research shows that knowledge workers focus on conditional knowledge of time and pragmatic knowledge.

Ahmad Al Khatib asserted that past researchers had found time management as one of the predictors of performance and achievement. In his research of 352 college students from Al Ain University of Science and Technology, UAE, he found that time management skill level explained 26% of the total variance in the grade point average. Chazia and Muhammad researched the relationship between the students' time management skills and academic performance. Time management is very important and may affect a n individual's performance and achievements. The data were collected from the Qurtuba University of Science and Technology students to analyse how effectively they manage their time to achieve their academic standards. Marika's (2021) study on Influence of teacher time management practices on service delivery in Public secondary school in Kitui County found out that there was a significant influence of proper time management practices on service delivery. The study recommended on proper scheduling of school activities to enable achievement of set goals and objectives.

2.7 Time Management, Biometric Authentication System and Employee Performance

Over the past several decades, health institutions have experienced rapid transformations through the emergence of modern technologies. Therefore, one such technology is the Biometric Authentication system (BAS) adopted by many institutions for tracking

employees" attendance and time to improve their performance (Akinduyite et al., 2013). It connects people to their special human resource records that could precisely capture actual data by certifying that staffs come to the workplace at the proper time and leave the duty place at the right time (Shehu & Dika, 2011).

Moreover, they feel job satisfaction and their struggles are acknowledged through the balanced workload. Employee attendance directly influences an organization's operational performance, ensuring it achieves its set operational performance levels (Ononiwu & Okorafor, 2012). Low attendance and unauthorized absenteeism do not raise concerns, particularly in health care institutions. However, employee identification is important in ensuring that the actual employee attends to duty. Organizations spend millions of their financial budget each year on creating unique monitoring divisions to address the problem of low attendance and unauthorized absenteeism from workplaces, particularly health care institutions but fail to gain the preferred outcomes. Where the employee's identification is not done effectively, those who are expected to be on duty may fail to report because their colleagues' sign for them if manual attendance registers are used instead of the biometric attendance system (Ali, 2018). Research studies show that many institutions adopted biometric authentication systems to increase labour/employee work efficiency and workforce administration.

In contrast to those manual procedures, a biometric authentication system is free from errors, accessible and accurate (Activenanda, 2016). In contrast, previous studies have attemptedto establish a relationship between biometric authentication management systems and an organization's performance (Akinduyite et al., 2013; Cupido,2011; Shawl, 2013). Most empirical studies (Mulumba, 2012; Ombogo, 2015; Adeqole et al., 2014) have shown a more positive relationship between biometric authentication systems and

organizational performance. Actual authentication scheduling in the place of work increases employee or workers' productivity, which leads to overhead cost savings that enhance an organization's operational performance (Ononiwu & Okorafor, 2012). A research study was conducted by Afolalu et al. (2016) at Babalola University, Nigeria, to assess employees' performance after the Biometric Authentication System (BAS) installation. The findings showed that it boosted work potential and the dedication to work among employees and provided a base to promote dedicated workers. On the other hand, the boss can also recognize the areas of non-attendance in the office, which can be used to re-organize the work. This technology regularized the employees, but their job effort remained unchanged, and they may be at risk of exclusion. However, it was observed that there were some challenges during the identification or the attendance process, like time inaccuracy and lack of awareness on how to operate the machine (Afolalu et al., 2016). The study indicated that some fields gained discipline, punctuality, and efficiency, which positively affected their uses. However, some negative impacts were observed that BAS technology was one of the most expensive from an economic point of view. Secondly, it had been used for formality rather than performance.

Derrick researched the time-wasting activities in organisations to help identify time-wasting behaviours and what to do about them based on information gathered through observations in the workplace and recent research articles on the topic. Although several researches have been conducted in the field of biometrics and some healthcare institutions, the literature review indicates that none has adequately addressed the impact of biometrics systems on employee performance in healthcare. Owiti (2010) concentrated on factors affecting customer acceptance of mobile phone technology in delivering healthcare services, which is a different technology. According to Oliver et al (2019), in a study on exploring time management skills for employee performance in Nigeria,

revealed a significant positive relationship between time management effectiveness as well as utilization of resources in Nigeria Mills Company Limited.

It further recommended organizations to train their employees on effective application of time management principles similarly, Said (2017) carried out a study on assessment of time management in improving organizational performance in the bank industry, a case of Kenya Post Bank, Nairobi. The study findings revealed that time management was not fully implemented and that some employees did not understand the value of time. It further recommended employees to focus on time as a company resource. Abanti (2010) surveyed the acceptability of biometric-based authentication systems. Though his discussion and recommendation touched on the impact of biometrics systems on existing hardware, he was more focused on the modalities' acceptability. He was limited to one private university in Australia. In a related study, Wirtz and Hercleous (2019) noted the potential of biometrics systems in improving service delivery efficiency.

The findings of this study were, however, not conclusive according to the scholars, and they recommended further investigation to enhance the validity of their results. This study was limited in methodology as it relied on interviews with the executives who did not have first-hand interaction with the system and focused on airline sectors whose clients and operations differ from those in healthcare. This study sought to bridge this gap. Nyaberi (2015), in a study on Assessment of Innovative strategies on service delivery at National Hospital Insurance Fund, Nakuru established that biometric registration techniques had positive significant influence on service delivery at NHIF Nakuru branch While Koech (2021) undertook a study on effect of biometric registration technique on service delivery at NHIF branches in Uasin-Gishu County, Kenya whose findings revealed a positive linear effect of biometric registration technique on service delivery. It

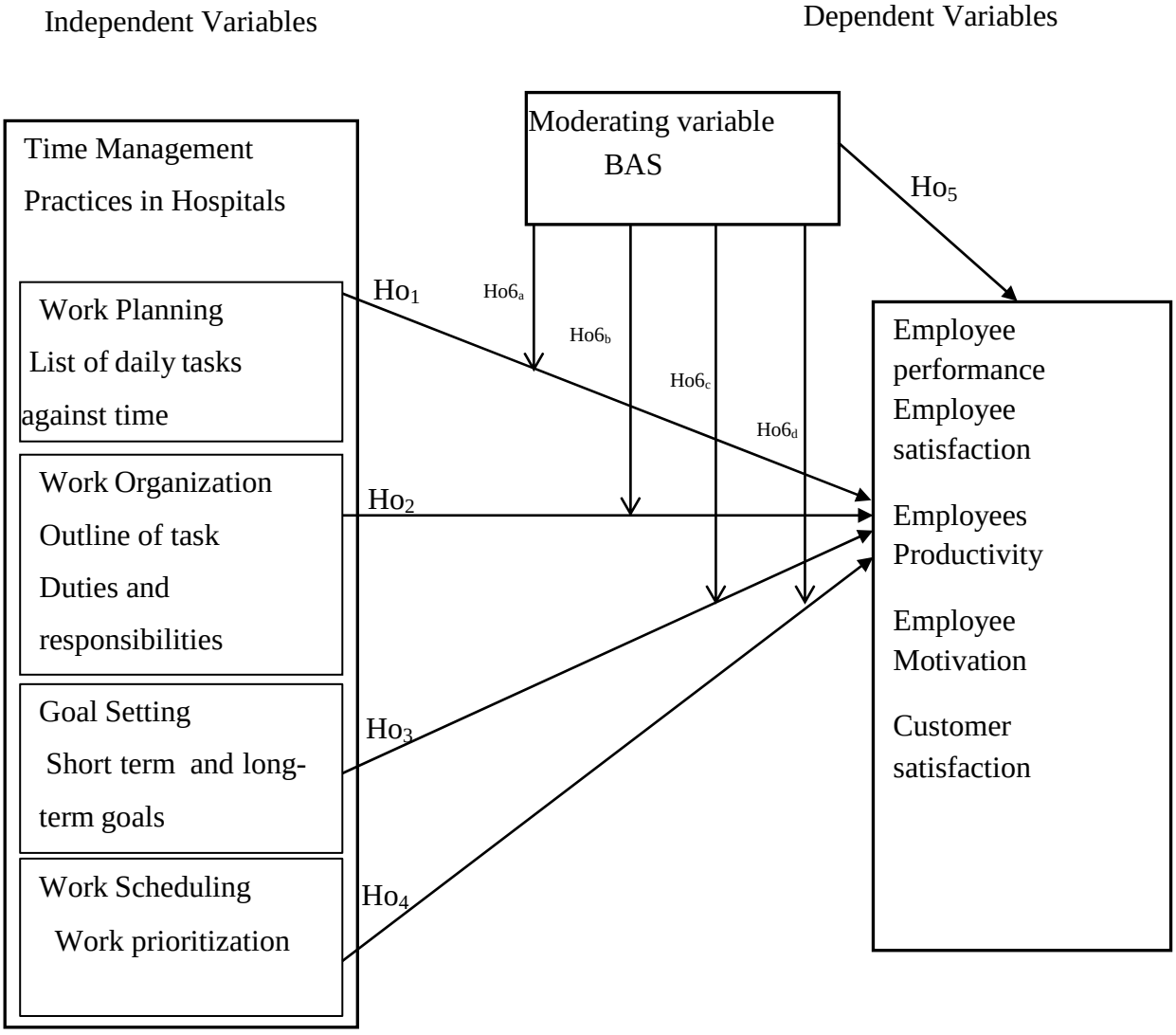
was thus concluded that the use of biometric registration technique at NHIF enhanced easy accessibility of data and was convenient to both National Hospital Insurance Fund and the clients. It has been noted that most studies conducted relate to the study variables in other organizations. There are however scarce studies on the relationship between time management and employee performance in private hospitals in Kenya where biometric authentication is a moderator. This forms the basis for the current study.

2.8 Conceptual Framework

The conceptual framework in Figure 3 indicates the hypothesised relationship between time management practices and employee performance as a direct link and BAS as a moderating variable. Work planning, work organisation, work goal setting and work schedules are constructs of time management. In addition, employee satisfaction, employee productivity, employee motivation and customer satisfaction are included in the constructs of employee performance. The conceptual framework, therefore, depicts the moderating effect of BAS on the relationship between time management and employee performance, that is, how the three study variables (time management practices, biometric authentication system and employee performance) interrelate.

Figure 1

Conceptual Framework



Source: Researcher, (2023).

2.9 Research Gap

Almoumani's (2020) study in Petra, Jordan on Effective Time Management in improving private universities employee performance concluded that there is an impact of effective time management (time planning, time organizing, time orientation, employee empowerment and time control on private universities). The study recommended that

private universities deepen the concept of effective time management and its importance to employees by motivating them manage their time effectively and further, invent ways that can improve time management through seminars and strong management control. According to Oliver et al (2019), in a study on exploring time management skills for employee performance in Nigeria, revealed a significant positive relationship between time management effectiveness as well as utilization of resources in Nigeria Mills Company Limited.

It further recommended organizations to train their employees on effective application of time management principles in management of time in order to achieve effectiveness and competitive advantage. It was also noted that managers should consider time as a strategy that facilitates efficient utilization of organizational resources and performance. Islam et al. (2021), study on time management for better job performance in Kuala Lumpar, found out that certain time management factors as prioritization of tasks, and usage of schedules as time management instruments sustained statistically significant positive relationship to job performance. This study conforms to that of Mallika et al., (2018) on Impact of time management on job performance and job satisfaction conducted in India which concluded that time management affects both Job performance and satisfaction.

In Africa, similar studies have been conducted. Daniel et al., (2020) in a study on time management on employee performance in Northern Nigeria Noodle Company limited revealed a positive relationship between organizational performance and effective time management. It recommended that, an increase in proper time management would increase organizational performance and that, in order to create a time conscious organization, one will have to be more time efficient thus organizations should streamline their time management processes. Chase et al. (2013) study on time

management strategies for productivity in Columbia, USA recommended the strategies to be adopted by organizations for effective time management to include setting realistic goals, prioritization and optimizing planning, involving team problem solving barriers and early management of potential distractions.

This study conforms to that conducted by Abugure et al (2022) who examined the Impact of time management behaviours on employee performance in humanitarian service organization in selected NPOs in Ghana and the results established that long range time management behavior has a positive impact on employee performance. It thus concluded that time management behaviours or practices should be of great concern to organizational analysis in terms of employee productivity. A study by Tirop (2003) on factors influencing time management practices among public secondary school principals in Uasin Gishu district, Kenya concluded that time management practices have an impact on school management and realization of individual and organizational objectives as well as creation of harmony between individual and organizational interests.

On the other hand, Njagi et al. (2012), undertook a study on time management and job performance in selected parastatals in Kenya concluded that time management and work performance are directly related. Parastatal heads were recommended to carry out sensitization of management by objectives measured within specific time frames. Said (2017) carried out a study on assessment of time management in improving organizational performance in the bank industry, a case of Kenya Post Bank, Nairobi. The study findings revealed that time management was not fully implemented and that some employees did not understand the value of time. It further recommended employees to focus on time as a company resource. The study further concluded that

poor time management ability among employees was a major factor for procrastination in the organization which was attributed to poor employee performance.

The study thus concluded a positive relationship between time management practices and employee performance in Kenya Red Cross, Kisii and recommended an adoption of time management strategies to increase organizational performance. Marika's (2021) study on Influence of teacher time management practices on service delivery in Public secondary schools' in Kitui County found out that there was a significant influence of proper time management practices on service delivery. The study recommended proper scheduling of school activities to enable achievement of set goals and objectives. From the literature review, most of the studies conducted on time management and employee performance dealt with educational institutions and other service providers. There are scarce studies on time management and employee performance in health care institutions in Kenya, necessitating this study on the moderating effect of Biometric authentication system on the relationship between the management and employee performance in private hospitals in Uasin-Gishu – County, Kenya.

Mason et al. (2020) undertook a study on Investigation of biometric authentication in healthcare environment in North Carolina, USA. The findings and conclusion proposed new technique of biometric authentication in healthcare that focuses on the use of per ocular biometrics and electronic master patient Index in healthcare information systems to identify humans in healthcare environment. This study focused on the system only and its efficiency and effectiveness.

Similar study was carried out on emergence of Biometric technology in health care regarding patient privacy and data protection concern in Argentina, USA by Gambhir (2021). It was established that the benefits of biometric technology in healthcare helped

authenticate patients correctly and reduced costs in medical errors. Further, the study suggested development of policies to regulate adoption of biometric technology in order to minimize litigation cases. This study focused on authentication of patients and biometric system but did not capture how it enhanced time management or employee performances which are the focus of this study. Ahmed et.al. (2022), In a study on Intelligent Multimodal biometric authentication model for personalized healthcare services carried out in Australia, found that multimodal fusion authentication model showed promising results with 99.8% accuracy and an equal error rate of 0.16 thus it was thought to be a promising technique recommended for adoption in healthcare system. These findings provide an insight on precision level of biometric authentication system which is paramount in the study as it moderates the relationship between time management and employee performance in private hospitals in Uasin-Gishu County, Kenya.

In Africa, a study was conducted by Mwapasa et al. (2020) in Malawi on the use of Biometrics within the healthcare system. It was found out that stakeholders in healthcare perceived that, implementation of biometrics within healthcare system posed a range of potential ethical benefits and risks and thus they recommended the need to bring together the prospective of multiple stakeholders to inform policy making and implementation and to monitor and evaluate the roll out of biometrics to assess the benefits and dangers. This study focused on the system and ethical benefits and risks. This study is related to that carried out by Mulumba (2012) on biometric authentication systems and service delivery in healthcare sector in Kenya where forty-three healthcare facilities provided respondents for the study in Nairobi, and revealed the factors affecting performance of biometric system in healthcare as response time, technical, accuracy, ease of operation, information output, security, and knowledge of information technology (CIT). It further

identified service delivery, reduction of financial losses, convenience, and customer satisfaction as positive impact of the system while service denial and hindrance to excellent service delivery were identified as the negative impacts.

This study depicted a relationship between biometric authentication system and service delivery which relates to employee productivity and performance, an area of focus in the current study. Koskei (2014) examined the implication of using biometric system on payment operations of an organization. A case study of one non-governmental organization in Kenya. The study concluded that the use of biometric system has made operational issues more efficient with minimal risks involved as well as achievement of technological advancement in the organization. A study like that of Ghambir (2021) was conducted by Kahoro (2015) in Kenya on Biometric personal and informational privacy concerns. The findings indicated gradual user acceptance of biometric technologies as a way of improving authentication and information security despite potential threats to security and privacy.

The study design was through an examination of scientific research papers, observation of existing technologies and analysis of effects surrounding personal and informational privacy which would pose a challenge in obtaining information on cross-sectional study employed. Nyaberi (2015), in a study on assessment of Innovative strategies on service delivery at National Hospital Insurance Fund, Nakuru established that biometric registration techniques had positive significant influence on service delivery at NHIF Nakuru branch. The study though, employed a single respondent which may not be generalizable to other organizations as a case study approach was adopted. The current study captures private hospitals in Uasin-Gishu County and the findings may be generalized to private hospitals with similar set up. Muluki (2017) In a study on leveraging biometrics for access control management in learning institutions in Kenya

found out that the adopted technology on use of biometrics not only reduced costs but was effective for recording and processing access and attendance data.

This study focused on biometric authentication system use and efficiency which is the moderator in the current study. It dwelt though in learning institutions. Similarly, Namiti (2020) studied on adoption of biometric system to manage teacher's absenteeism for improvement of performance. A case of Karuri High School in Kiambu County. The study thus revealed that traditional methods had many challenges in checking teachers' attendance thus negatively influenced teacher's performance.

The study thus revealed that biometric authentication system had a lot of benefits in terms of security, accuracy, in attendance tracking, flexibility, convenience and time saving. These study findings are in line with those of earlier scholars including that of (Muluki 2017) on accuracy and precision levels of biometric authentication system. Koech (2021) undertook a study on effect of biometric registration technique on service delivery at NHIF branches in Uasin-Gishu County, Kenya. The findings revealed a positive linear effect of biometric registration technique on service delivery. It was thus concluded that the use of biometric registration technique at NHIF enhanced easy accessibility of data and was convenient to both National Hospital Insurance Fund and the clients. It further recommended the full implementation of biometric registration technology at NHIF. This study relates to the current study as it dealt with Biometric registration and service delivery though much focus was put on data accessibility and efficiency.

Wambui et al. (2022) conducted a survey of Biometric Technologies towards secure and robust systems. A case study of Mount Kenya University. It was concluded that increased security awareness and understanding of security flaws helped users avoid data

leakage and protected their privacy. The study recommended the use of contactless security system that was thought to be more secure and did not involve and physical contact with the sensor due to impact of covid-19 outbreak repercussion.

The above empirical analysis shows that extensive studies on time management practices for improving employee performance in private hospitals have been done outside Kenya. Very few have been done in Kenya while most studies on biometric technology focused on the system aspects such as effectiveness and efficiency, data accuracy, potential risks, and privacy. However, these studies are closely related to current research topic. The few studies carried out in Kenya focused on biometric technology and service delivery in learning institutions and other organizations. Although the studies have close relationships, they have not yet been conducted specifically in healthcare institutions that use Biometrics for authentication in Kenya. None of the studies done focused on Biometric authentication system as a moderator. Therefore, considering these, the researcher undertook the study titled; the moderating effect of Biometric Authentication System on the relationship between Time management practices and employee performance in private hospitals in Uasin-Gishu County, Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter illustrates the methodology of the study. It presents an overview of the research design, study area, target population and sampling techniques used. In addition, data collection methods and data analysis has been discussed, including measurement of variables, reliability, validity, ethical considerations, limitations and expected outcomes of the study.

3.2 Research Philosophy

A philosophical paradigm refers to the basic beliefs that guide actions, also known as paradigms, epistemologies, and ontologies (Creswell, 2009). It is the general orientation about the world and the nature of research philosophy that the researcher holds, which leads to the researcher embracing either qualitative, quantitative, or mixed methods approaches. This study adopted a pragmatic paradigm based on the understanding that researching time management practices and employee performance are deeply rooted in the social context. Hence, they can at least partly, be measured to a certain extent on a scale representing the respondents' perceptions. The determination of the relationship between time management and employee performance which was the major aim of this study, would be best accomplished through hypothesis testing (Positivism). But the in-depth exploration of people's perceptions is deemed very instrumental in enhancing the results and shedding more light on this phenomenon (Interpretivism) (Creswell, 2009).

3.3 Research Design

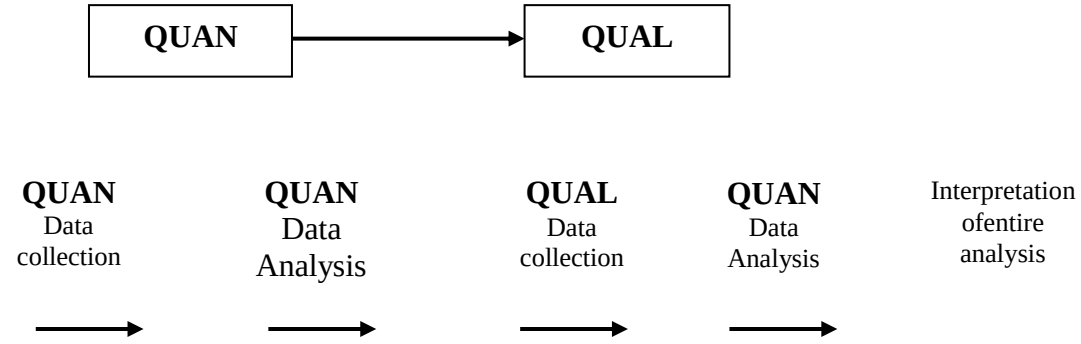
A research design is a logical thread that holds all the research's crucial aspects together so that they can derive meaning (Kothari, 2004). The study utilised an explanatory and

cross-sectional survey research design. The explanatory design was used to test the relationship between time management practices and employee performance and the moderating effect of a biometric authentication system.

The explanatory research design was preferred for this study because of its appropriateness in examining the causal relationship between study variables (Saunders *et al*., 2009). Since the study employed a mixed research approach, a Sequential explanatory research design was adopted, and a cross-section survey design was utilised, where quantitative data were collected first, followed by a collection of qualitative data from the employees of private hospitals in Uasin-Gishu County. Priority was given to the quantitative data, and the two methods were integrated during the interpretation phase of the study. The steps in this study are shown in Figure 2.

Figure 2

Sequential Explanatory Research Design



Source: Researcher, (2023)

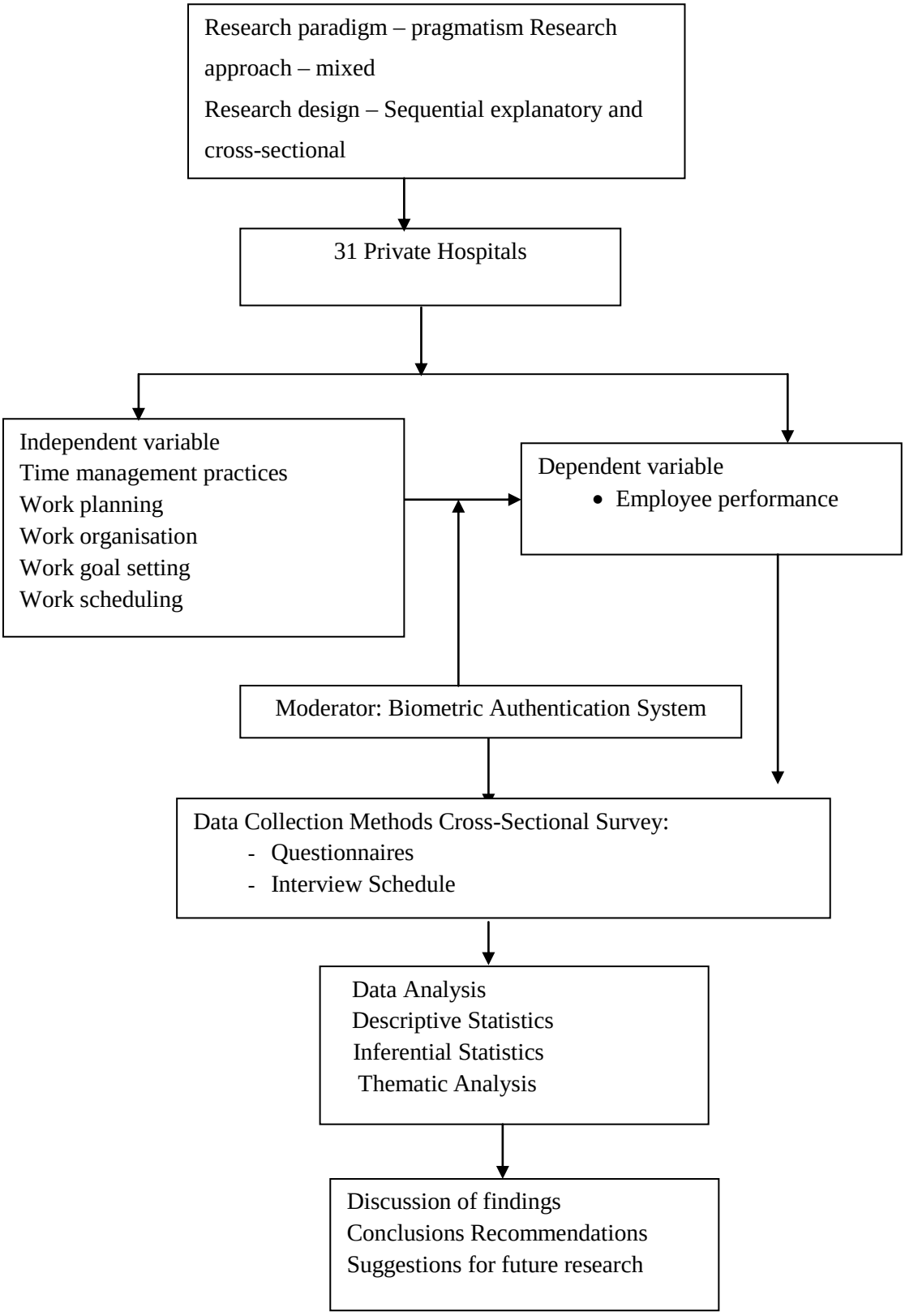
The purpose of sequential explanatory design typically is to use the qualitative results to assist in interpreting and explaining the findings of a primarily quantitative study. The straightforward nature of this design is one of its main strengths. The design is easy to implement because the steps fall into clear separate stages. In addition, this design feature makes it easy to illustrate and report. This design's major weakness is the length

of time involved in data collection, with the two separate phases. This is especially a drawback if the two phases are given equal priority. However, this drawback was not applicable in this study because data collection was done sequentially in two phases: quantitative data were collected first, followed by qualitative data collection. This research investigated the relationship between time management practices and employees' performance and the moderating effect of biometric authentication system on the relationship between time management practices and employees' performance in private hospitals in Uasin-Gishu County.

The research design flow diagram, which depicts the whole research process from conceptualization to conclusion, is presented in Figure 3 below.

Figure 3

Research Design Flow Diagram



Source: Researcher, (2023)

The research questions determined the decision to choose an appropriate method for this study. In approaching the research task using the pragmatic paradigm, the mixed methods approach was deemed to be the methodology that would result in achieving the research objectives (Khalid & Kazi, 2012). Becker and Gassmann (2006) support the combination of quantitative and qualitative research methods for the valuable insights that such mixed methods bring to social science research. Research in the social sciences is largely characterised by deductive theory-testing based on large sample data (Beven, 2007). However, he argues that this approach may not be a suitable initial step for research where theory is still at a pre-definitive stage. Consequently, the use of quantitative and qualitative approaches was deemed appropriate for this study because first, it sought to identify the factors that influence employee performance that can be investigated through statistical analysis, and second, it sought to understand how these factors influenced employee performance which is suited for a qualitative data collection approach such as interviews. In view of this, this study incorporated a mixed methods design to capture the viewpoints of top hospital administrators in 8 out of the 31 hospitals under study.

3.4 Triangulation

The notion of triangulation is common in literature, particularly where qualitative data is analysed (Eisenhardt, 1989; Mile & Huberman, 1994). Researchers seek to validate data based on confirmation from multiple sources. The grounded theory takes the view that even a single instance is sufficient to validate a particular observation (Glazer & Strauss, 1967, Strauss & Corbin, 1998). In this research, the methodological design solicited responses from permanent employees of private hospitals in Uasin-Gishu County and analysed quantitative and qualitative data to enable triangulation. Yin (2003) and Eistenhardt (1989) use the word triangulation to represent multiple confirmatory sources.

The current study of time management practices, biometric authentication systems and employee performance in private hospitals in Uasin-Gishu County, Kenya, has been implemented using quantitative and qualitative approaches to produce appropriate results. Hence, confirming triangulation in the study. Triangulation involved the use of two independent sources of data, i.e., quantitative, and qualitative. Quantitative data was collected through questionnaires, while qualitative data was gathered through an interview schedule.

The two data sets were integrated at the data analysis stage. The methods used in the study were two and independent, i.e., mixed method whereby qualitative data was used to validate quantitative data. The study used several theories relating to time management practices, biometric authentication systems and employee performance to achieve the study's aims.

3.5 Location of the Study

The study was conducted in private hospitals in Uasin-Gishu County. Uasin-Gishu County is situated in the Midwest of the rift valley, covering an area of 3,345.2 square kilometres and lies between longitude 34 degrees 50" East and 35 degrees 37" West, Latitude of 0 degrees 03" South and 0 degrees 55" North. The county is subdivided into six sub-counties: Soy, Turbo, Moiben, Ainabkoi, Kapseret and Kesses. It borders six counties; ElKeiyo Marakwet county to the East, Tanzania to the North, Kericho to the South, Baringo to the South East, Nandi to the Southwest and Bungoma to the West.

The county has an estimated population of 894,179, with an urban population of 31% of the entire population. The population density is 267 persons per square kilometre. The county has a potential labour force of 550,000, comprising 56% of the entire population. Hence 44% of the population is dependent. Uasin-Gishu County is a highland plateau

with altitudes falling gently from 2700 meters above sea level to 1500 meters above sea level. (See Appendix 111). The county has 31 private hospitals, which employ a total of 2,298 employees. These hospitals face stiff competition not only from each other and other health providers but also from public hospitals in the County.

3.6 Population of the Study

Study population refers to the whole group of individuals, objects, items, cases, articles or things with common attributes or characteristics from which samples are taken for measurements (Mugenda & Mugenda, 2003). The population targeted in this study comprised all staff who use biometric authentication systems for clocking on to work in private hospitals in Uasin-Gishu County. The private hospitals for the purpose of this study comprised 31 private hospitals in Uasin-Gishu County, with a staff totalling 2298 (Table 3.1 overleaf).

Table 1

Population of the Study

Sn	Private hospitals in Uasin-Gishu county	Number of Staff (N)
1	Eldoret hospital	169
2	Top Hill	96
3	Cedar	42
4	Reale	93
5	St.Luke orthopaedic and trauma	60
6	Palm care	34
7	St. marys Kapsoya	142
8	Rapha	61
9	Fountain	46
10	Ambience	41
11	Gynocare	37
12	Plateau Mission	68
13	Top Tree	41
14	Mediheal	195
15	ElgonView	45
16	Racecourse	104
17	Lighthouse healthcare	97
18	Tumaini medical clinic	34
19	Lelmolok Nursing Home	48
20	Marie stopes health centre	39
21	Langas RCEA	36
22	elgonview hospital	47
23	Neema medical clinic	98
24	Eldoret mtc clinic	47
25	St Andrew medical hospital	118
26	Mamra medical centre	61
27	Kenya community health network	82
28	Atimiros memorial	131
29	Baharini medical clinic	48
30	Rapha dialysis and diagnostic centre	86
31	Glogoh hospital limited	52
	Total	2298

Source: Researcher, (2023)

3.7 Sampling Procedures and Sample Size

3.7.1 Sample Frame

The sample frame for the study is composed of all permanent employees of 31 private hospitals in Uasin-Gishu County which use biometric authentication systems. According to the latest staff list from the hospitals, as of January, 2020, there was a total of 2298 employees in the hospitals under study.

3.7.2 Sampling Procedure

Sampling assumes that by selecting part of the elements in the population, conclusions maybe obtained about the entire population (Polit & Beck, 2010). This study employed both probabilistic and non-probabilistic sampling techniques. Probabilistic sampling utilised stratified and simple random sampling techniques, while non-probabilistic techniques employed purposive sampling. Stratified sampling was used to obtain the respondents in each hospital. Stratified sampling was used since every unit in a stratum/hospital has the same chance of being selected. Therefore, an adequate representation of each group can be ensured by varying proportionate sampling among the strata. Staff identification numbers were utilised to select the respondents. This was achieved using proportionate sampling of the permanent employees in each stratum/hospital. This study employed simple random sampling in selecting the required respondents from each stratum. This provided an opportunity where all subsets of the sample frame were given an equal probability, and each frame element had an equal probability of selection. Purposive sampling was utilised to identify the 31 hospitals and to identify the eight key informants who were not captured using simple random sampling.

3.7.3 Sample Size

According to Copper and Schindler (2006), the sample size must be large enough to be representative of the universe's population. The sample size determines the statistical accuracy of the findings. The sample size is a function of change in the population parameters under study and the needed estimation of quality (Wenger, 2000). The study sample size was computed using Yamane (1967:886) formula, which was modified by Saunders et al. (2003) to calculate sample sizes since the target population was known.

$$n = {}^{N}/_{1 + N_{e^2}}$$

Where, n is sample size; N is the population size; e is the error of sampling for the study will be 0.05.

Out of the total 2,298 staff /individual, a sample of 341 was selected based on Yamane (1967) procedure.

Table 2

Sample Frame

Sn	Private hospitals in Uasin-Gishu county	Number of Staff (N)	Sample (n)
1	Eldoret hospital	169	25
2	Top Hil	96	14
3	Cedar	42	6
4	Reale	93	14
5	St.Luke orthopaedic and trauma	60	9
6	Palm care	34	5
7	St. Marys Kapsoya	142	21
8	Rapha	61	9
9	Fountain	46	7
10	Ambience	41	6
11	Gynocare	37	5
12	Plateau Mission	68	10
13	Top Tree	41	6
14	Mediheal	195	29
15	Elgon-View	45	7
16	Racecourse	104	15
17	Lighthouse healthcare	97	14
18	Tumaini medical clinic	34	5
19	Lelmolok Nursing Home	48	7
20	Marie stopes health centre	39	6
21	Langas RCEA	36	5
22	Elgon view hospital	47	7
23	Neema medical clinic	98	15
24	Eldoret mtc clinic	47	7
25	St Andrew medical hospital	118	17
26	Mamra medical centre	61	9
27	Kenya community health network	82	12
28	Atimiros memorial	131	19
29	Baharini medical clinic	48	7
30	Rapha dialysis and diagnostic centre	86	13
31	Glogoh hospital limited	52	8
Total		2298	341

Source: Researcher, (2023)

3.8 Instrumentation

Data collection involved identifying types and sources of data instrumentation and data collection procedures. As Kombo and Tromp (2006) observe, researchers use two major data sources: primary and secondary sources. Primary data is the information gathered directly from the respondents. The study utilised primary data which was obtained from the respondents, i.e., permanent employees of the 31 private hospitals in Uasin-Gishu County. The study adopted the survey method of data collection since it aimed at collecting opinions and views on a range of issues from respondents in private Hospitals in Uasin-Gishu County. Primary data was collected using a self-administered structured questionnaire for the respondents. A questionnaire refers to a collection of items to which a respondent is expected to react to, usually in writing (Kothari, 2013). Sekaran (2013) suggests that questionnaires are resourceful data collection which enables the researcher to know what will be required and how to measure the variables of concern.

In addition, questionnaires are easy to administer and analyse. Besides, questionnaires are advantageous because they cover a large population within a short time at minimal cost on the part of the researcher and encourage independence and accuracy of responses from the respondents (Sekaran, 2013). The questionnaire was chosen because it provides a more comprehensive view than any other research tool. The questionnaires were formulated according to the study objectives. The researcher administered the questionnaires personally with the help of one research assistant, and thereafter the filled questionnaires were collected immediately for data analysis. The questionnaire items for time management practices (work planning, work organization, goal setting, work scheduling) and employee performance were developed following a thorough literature

review. The questionnaire had seven sections as follows: Section A contained questions on employee Demographic Information; Section B contained items on Work Planning; Section C contained items on work organization; Section D contained items on Goal Setting; Section E contained items on Work Scheduling; Section F contained items on Employee Performance and section G contained items on Biometric Authentication System (BAS).

A 5-point Likert scale (1=strongly disagree, 2=disagree, 3=uncertain, 4=agree and 5= strongly agree) was used to solicit respondents' perceptions and opinions regarding the moderating effect of biometric authentication system on the relationships between time management practices and employee performance in private Hospitals in Uasin Gishu County. In addition, to questionnaires, an interview schedule was prepared to contain open-ended questions covering all the objectives of the study. An interview schedule is defined by Mugenda and Mugenda (2003) as a set of questions that the interviewer asks when interviewing. The interview enabled the researcher to collect information not covered in the questionnaire. To assist in standardising the interview situation, the interviewer asked the same question in the same manner. Kothari (2013) notes the usefulness of this method as its capability to produce reliable results. It is, however, thought to be expensive. The interviews were aimed at eliciting in-depth information from top hospital administrators on the influence of time management practices on employees' performance in private hospitals in Uasin-Gishu County who were not selected in the questionnaire process. The interview schedule augmented data collected from the questionnaire.

3.8.1 Pilot Study

According to Feng and Yamat (2019), piloting is important because it helps identify the items' ambiguities and vague questions for improvement. Henry et al. (2012) observe that a pilot test is conducted to evaluate the questionnaire developed to find out if potential inconsistencies or errors exist or if questions need clarification to improve the research instruments. A pilot study was undertaken before the main study. Two private hospitals in Nakuru County were randomly picked. According to Connelly (2008), the pilot study sample should be 10% of the projected for the main study. The pilot study involved administering the research instruments to thirty-four users of biometric authentication systems in two randomly selected private hospitals in Nakuru County, seventeen participants from each hospital were purposively selected to participate in the pilot study. As Dillman (2000) suggested, all the variables' items were noted to be above the minimum 0.7 reliability value, which is an acceptable rating on Cronbach's alpha.

3.8.2 Validity of the Instrument

Table 3

Results of Construct Validity

		Employee performance	**Verdict**
Work planning	Pearson Correlation	.603**	Valid
Work organisation	Pearson Correlation	.796**	Valid
Goal setting	Pearson Correlation	.685**	Valid
Work scheduling	Pearson Correlation	.784**	Valid
Biometrics	Pearson Correlation	.634**	Valid

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

Source: Researcher, (2023)

Validity is termed as the degree to which the results from the analysed data represent the phenomena under study (Fraenkel, 2000; Mugenda & Mugenda, 2003). According to Kothari (2013), validity is the most critical criterion and indicates the extent to which an instrument measures what it is anticipated to measure. Therefore, content validity was used in this study. Content validity is the extent a measuring instrument provides adequate coverage of the topic under study (Saunders, *et al*., 2009). This was achieved through a literature review to develop the questionnaire items to ensure that they cover the study objectives and hypotheses. Expert judgment was also sought from the supervisors and research experts to help improve the validity of the instrument.

In addition, a pilot study was carried out in private hospitals in Nakuru County to enhance the validity of the instrument. Construct validity is the degree to which scores on a specific research instrument relate to other measures that are consistent with hypotheses concerning the paradigm being measured (Bedford & Speklé, 2018). The construct validity of the questionnaire was conducted using Pearson Product Moment Correlations. The construct validity test was done by correlating each construct or item questionnaire score with the employee performance. Item-item questionnaire that significantly correlated with employee performance indicated that the items were valid.

3.8.3 Reliability of the Instrument

Table 4

Reliability Analysis Test

Items	Cronbach's Alpha	No. of Items
Work planning	0.941	9
Work organisation	0.898	9
Work goal setting	0.824	9
Work scheduling	0.897	9
Employee performance	0.862	31
Biometric authentication system	0.988	9

Source: Survey Data, (2023)

Reliability refers to a measurement that supplies consistent results with equal values (Blumberg et al., 2005). It measures research's consistency, precision, repeatability, and trustworthiness (Chakrabartty, 2013). It indicates the extent to which it is without bias (error free) and ensures consistent measurement across the various items in the instruments (the observed scores). The reliability of a research instrument concerns the extent to which the instrument yields the same results on repeated trials (Sharma, 2016). Reliability was calculated using Cronbach's Alpha method to test internal consistency. Cronbach alpha was used in order to establish the degree of consistency and accuracy of items in the questionnaire (Sharma, 2016).

The Cronbach Alpha reliability coefficient for the questionnaire was found to be 0.932, which according to Taber (2018), was above the threshold of 0.7 and hence is considered excellent. This indicates that the research instrument was a reliable measure for this study. Studies have found that a reliable instrument has a reliability coefficient (alpha

value) of 0.7 and above (George & Mallery, 2003; Saunders et al., 2009). Therefore, this study's reliability coefficient of 0.7 and above was acceptable. Table 3.4 presents the reliability results for each variable.

3.9 Data Collection Procedures

Research involves collecting data from people and about people. Therefore, ethical consideration during the study is critical (Topchy et al., 2005). The researcher obtained an introductory letter from Kabarak University.

This letter assisted in getting permission from the National Commission for Science, Technology, and Innovation (NACOSTI) to conduct the research. Permission was also sought from the County Commissioner and County Director of Education Uasin-Gishu County. The researcher identified and trained three research assistants who assisted in administering the questionnaires to the respondents. The research assistants were involved in facilitating efficiency in data collection. The selected private hospitals were visited, and the respective management consulted to help the researcher obtain study information. The respondents were asked to hand the questionnaires back after filling them on the same day. This ensured a high return rate as opposed to when the respondents were left with. In the case of absentee respondents, questionnaires were left behind with the heads of departments, and arrangements were made to pick them up later.

3.10 Data Analysis

3.10.1 Data Screening

The data screening process was undertaken before the analysis, interpretation, and conclusionthereof. This process entailed data preparation, editing, coding, and checking

for potential outliers and mission values. The process assured integrity, reliability, and relevance of the data fitted into a model for estimation and regression purposes. The screening of the data was based on the research objectives and hypotheses, and the researcher was able to understand the data before data analysis. To check for missing values, the interviewer-administered questionnaire technique and careful coding of the data (Howell, 2012) were followed.

3.10.2 Data Analysis

The data collected was edited and coded for analysis with the aid of the Statistical Package for Social Science (SPSS) version 26, the computer programme for windows. Descriptive and inferential statistics was employed in analysing data. Descriptive statistics, namely: frequencies, percentages, mean and standard deviation, were used to summarise and describe the study variables. Correlation analysis describes the relationship between the variables' strength, direction, and significance. Hypotheses were tested using multiple regression to observe the relative predictability of the variables.

All hypotheses were tested at a significant level of alpha equal to 0.05. The null hypotheses were accepted if $p \geq 0.05$ and rejected if $p < 0.05$ based on the results.

3.10.3 Regression Model

The following multiple regression model is specified for objectives one to five:

$$y = \alpha + \beta_1 x_1 + \varepsilon \quad \text{(M3.1)}$$

$$y = \alpha + \beta_2 x_2 + \varepsilon \quad \text{(M3.2)}$$

$$y = \alpha + \beta_3 x_3 + \varepsilon \quad \text{(M3.3)}$$

$$y = \alpha + \beta_4 x_4 + \varepsilon \quad \text{(M3.4)}$$

$$y = \alpha + \beta_5 M_1 + \varepsilon \quad \text{(M3.5)}$$

where, y is employee performance; α is intercept or constant; β_1 = represents the slope (regression coefficient) or change in y by each $x_1 \rightarrow x_4$ time management practices (work planning; work organization; goal setting; work scheduling respectively); M_1 is Biometric authentication system; Ɛ is the error term.

To test the moderating effect of biometric authentication system the following regression model was utilized;

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 M_1 + \varepsilon \quad \text{(M3.6)}$$

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 M_1 + \beta_6 x_1 M_1 + \beta_7 x_2 M_1 + \beta_7 x_3 M_1 + \beta_8 x_4 M_1 + \varepsilon \quad \text{(M3.7)}$$

where, y is employee performance; α is intercept or constant; $\beta_1 \rightarrow \beta_8$ = represents the slope (regression coefficient) or change in y by each $x_1 \rightarrow x_4$ time management practices (work planning; work organization; work goal setting; work scheduling respectively); M_1 is Biometric authentication system; Ɛ is the error term.

3.10.4 Regression Model Assumptions

Regression analysis describes the statistical relationship between variables (Guerard, 2013); whereas a regression model is used for estimation purposes (Baron & Kenny,

1986; Campbell, 2008). The data were fitted into a regression model under certain assumptions; however, if such assumptions are violated, the results may be unreliable, biased, and inconsistent. As a result, erroneous findings and recommendations for further research were reached. Therefore, the following assumptions were examined:

i. **Normality tests** assume that the data sets are normally distributed (Hair et al., 2010). The normality of data was tested using a degree of Skewness and Kurtosis for each of the variables in the study, as descriptive statistics indicated. The study also used the Kolmogorov-Smirnof tests to check for normality because it is suitable for a larger sample size (Ghasemi & Zahediasi, 2012). The thumb rule is that if the tests are significant, the data is not normally distributed; thus, ρ values must be greater than 0.05 ($\rho > .05$) for the data to be normally distributed (Hair et al., 2010).

ii. **Linearity:** It assumes that all independent variables must have a linear relationship with the dependent variable. Thus, linearity is acknowledged as the degree to which the dependent variable changes due to variation in the predictor variables (Hair et al., 2010). This assumption was assessed using Analysis of Variance (ANOVA).

iii. **Homoscedasticity:** Homoscedasticity assumes that the variance of the dependent variable is the same across the ranges of independent variables (Schutzenmeister et al., 2012; Osborne & Waters, 2002). The present study reduced the chances of violating the assumption by ensuring that the data utilised in testing the hypotheses is normally distributed. In this regard, Levene's test statistics were employed to check for homoscedasticity. The decision criteria are that Levene's test statistic value should be greater than 0.05 ($\rho > .05$) (Hair et al., 2010).

iv. **Multicollinearity:** This takes place when two or more variables are highly correlated, thus, affecting the estimation of the regression parameters in the model (Hair et al., 2009). It assesses the regression coefficients unknown, thus frustrating interpretations (Gujarati & Porter, 2003) and yielding incorrect results (Palaniappan, 2017). Previous studies indicate that there is a problem with multicollinearity if the values of correlations among variables are > .9 (Hair et al., 2010). In addition, the value of VIF is > 10 (Stevens, 2009). The study used the correlation matrix and VIF to check for multicollinearity.

v. **Independence of error terms**: in social science, research is assumed to be independent of each other (Chatterjee & Hadi, 2012). Non- Independence of error in the regression model yields biased estimates of standard error and significance. Although the estimates of the regression coefficients may remain unbiased, they may still be inefficient.

The study used the Durbin-Waston range from 0 to 4 such that the residuals are not correlated if the Durbin-Waston statistic is approximately 2. Furthermore, the acceptable range for Durbin-Waston tests is between values of 1.5 and 2.5.

3.11 Ethical Consideration

Ethical consideration is necessary for research for it seeks the consent of the respondents, for nobody can be forced to participate in the study (Roux et al., 2005). Therefore, information collected from participants was treated as private and confidential as much as possible. Furthermore, the study's purpose was explained to participants before data collection. This enabled the respondent to make an informed decision on whether to participate in the study or not. Mc Millan and Schumacher (1997) stressed that during research, study information should remain anonymous

throughout the research period; therefore, participants' responses were presented anonymously. Additionally, the study was conducted at the convenience of the respondents to avoid inconveniencing their schedules. Furthermore, the researcher assured respondents of the anonymity of their responses. Finally, all literature from other authors was dully acknowledged to avoid plagiarism of any kind.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter provides findings of the effect of time management practices on employee performance in selected private Hospitals in Uasin Gishu County, Kenya. It also provides results of the moderating effect of Biometric Authentication System on the relationship between time management practices and employee performance. It covers sections on response rate of participants, data preparation, descriptive statistics, factor analysis, correlation, and inferential statistics.

4.2 Response Rate of the Study

The use of a survey questionnaire to collect first-hand information is common in social sciences studies (Edwards et al., 2009) because of its viable financial option if the researcher is to collect data from large and geographically isolated populations. Therefore, in this regard, the response rate is an imperative yardstick of survey quality as it ensures accurate and valid survey results (Bobbie, 2013; Hair *et al*., 2010). Hence, the response rate refers to the proportion of individuals in a sample population that participates in a survey and is perceived as a significant component of the quality of survey-based research. The study distributed three hundred and forty-one (341) questioners in private hospitals in Uasin-Gishu County.

Table 5

Response Rate of Questionnaire

	Number of questionnaires	Percentages
Administered Questionnaires	341	100.00
Returned Questionnaires	317	92.96

Source: Research Data (2023)

Three hundred and seventeen (317) questionnaires out of the 341 distributed were filled and returned, giving a response rate of 92.96%. This response rate is an excellent representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% and above is adequate for analysis and reporting; a rate of 60% is reasonable, while a response rate of 70% and over is excellent. Based on this assertion, the response rate of 92.96 % was therefore ideal.

4.3 Data Preparation and Processing

The data screening and cleaning process involves an inspection of the collected data and correction (or removal) of any errors that potentially can cause substantial impacts on the analysis result (Osborne, 2013). Data preparation and processing often include examining missing values, identifying substantial errors, managing raw data for appropriate analysis use, and assessing normality and outliers (Tabachnick & Fiddell, 2014).

4.3.1 Examination of missing data

First, the study identified and rectified missing values in the dataset. Researchers may remove cases if they have more than 50% of the value missing (Hair et al., 2010). These cases can substantially impact the rest of the observations (Tabachnick & Fidell, 2014). Following this suggestion, the study omitted the cases with more than 50% of missing values. After removing the cases, the study also treated the cases with less than 50% of missing values. To treat such missing values, three options were applied; list-wise exclusion: by removing the case from analysis if any data is missing in the case. Pairwise exclusion, which involves removal of the case if they are missing the data required for specific analysis. Replacing with mean; involves the calculation of the mean value for variables and applying the mean on the missing value. Among the three techniques, the

study adopted the pairwise exclusion method considering its advantage over the rest since it has fewer problems with convergence (factor loadings estimates are relatively free from bias) and it is easy to implement (Hair et al., 2010).

4.3.2 Examination for Outliers

Outliers refer to cases or observations with values for variables that are substantially different from those in other cases (Byrne, 2010; Hair et al., 2010). The outliers are said not to be representative of the population. They can distort statistical tests and thus work counter to the objective of the study. Outliers can be checked from a univariate, bivariate and multivariate perspective. The study performed a multivariate test for outliers, using a multivariate analysis that investigated multivariate outliers with utmost scores on two or more variables. This is as opposed to univariate outliers that have an extreme score on a single variable (Kline, 2010, 2005). A common approach to the detection of multivariate outliers is the computation of the squared Mahalanobis distance (D^2) for each case (Hair et al., 2010).

Squared Mahalanobis distance (D^2) measures the distance in standard deviation units between a set of scores for one case, and the sample means for all variables. The (D^2) assesses the extent of the dissimilarity of each observation or case (in term of its distance from the mean centre of all observations) across all variables. An outlying case (the higher D^2 values relative to other cases) will have a D^2 value that stands distinctively apart from all other D^2 values. As a thumb rule, Hair et al. (2010) suggested identifying any case in which the D^2/df value exceeds three or four in large samples (where the sample size is > 200) as an outlier. Following Hair et al. (2010) suggestions, the dataset was examined for the presence of multivariate outliers using D2 as a measure of distance and computed D^2/df. Not all the cases were equal to or exceeding three, suggesting there

were no outlying cases. Thus, the cases were not dropped from further analysis. Thus, 317 cases were used in all subsequent analyses performed in this study.

4.4 Characteristics of Respondents

The researcher asked the respondents for some basic information. The outcomes were as follows:

4.4.1 Classification of Respondents by Gender

Table 6 illustrate the gender distribution of employees as captured in the interview questionnaires. The study attempted to determine the gender of the respondents.

Table 6

Classification of Respondents by Gender

Gender	Frequency	Percent
Male	148	46.7
Female	169	53.3
Total	317	100.0

Source: Research Data (2023)

As indicated in Table 6 above, most of the respondents (n = 169, 53.3%) were female employees, while the male was (n = 148, 46.7%). This indicates that female employees were most employees working in private Hospitals in Uasin-Gishu County. This could be attributed to many females specializing in medical-related courses, particularly in the nursing profession.

Consequently, the results of the study in Table 4.2 imply that private hospitals in Uasin-Gishu County followed the two-thirds gender rule as enshrined in the constitution of

Kenya 2010, specifically in Article 27(8), which enhances the adherence to the two-thirds gender rule. Furthermore, the findings are in line with the results of the study done by Raikes (1992) on gender and the production of health care services, particularly issues for women's roles in health development, where the results of his study established that female health workers make up to 53.3% per cent or more of the health sector workforce in developing countries including Kenya.

4.4.2 Classifications of Respondents by Age

The researcher also asked the respondents for basic age information. The results are presented below: The information in Table 7 shows the number of responses by age classification.

Table 7

Classification of the Respondents by Ages

Age	Frequency	Per cent
18-22 years	10	3.2
23-27 years	39	12.3
28-32 years	81	25.6
33-37 years	45	14.2
38-42 years	68	21.5
43-47 years	14	4.4
48-52 years	55	17.4
53 years and above	5	1.6
Total	317	100.0

Source: Research Data (2023)

A cross-tabulation was used to establish age distribution. Generally, most of the respondents were aged between 28-32 years (n= 81, 25.6%). Followed by (n= 68, 21.5%) where of age 38-42 years. In addition, the study findings indicated that (n= 55,

17.4%) were between the ages of 48 and 52. While (n=45, 14.2%) of the respondents were aged between 33-37 years. Further, the study finding indicated (n=39, 12.3%) of the respondents were between 23 and 27 years old. While (n=14, 4.4%) where of the age 43-47 years. Finally (n=10, 3.2%) of the respondents were between 18-22 years old. Lastly, the study finding revealed that the minority of the respondents (n=5, 1.6%) were of the age 53 years and above.

This indicates that most of the employees serving patients using biometric authentication systems in private Hospitals in Uasin-Gishu County were youth aged between 18-35 years. This implies the youth are highly conversant with information technology. Prior studies have established a positive relationship between age and perceived difficulty in learning a new software application (Morris & Venkatesh, 2000). There is also evidence that older individuals have higher levels of computer anxiety than their younger counterparts (Chaffin & Harlow, 2005) and that higher levels of computer anxiety are associated with the older individual's greater reluctance to learn new skills (Jung et al., 2010). Hence, it was evident in the use of biometric authentication systems in private Hospitals in Uasin-Gishu County.

4.4.3 Classification of Respondents by Level of Education

The result in Table 8 shows the number of responses by the level of education.

Table 8

Classification of the Respondents by Level of Education

Highest Level of Education	Frequency	Percent
Bachelor's Degree	36	11.4
Master's Degree	7	2.2
Diploma	249	78.5
Higher Diploma	7	2.2
High School	3	0.9
Certificate	14	4.4
CPA Part III	1	0.3
Total	317	100.0

Source: Research Data (2023)

From the findings, most of the employees (n= 249. 78.5%) indicated that they were diploma holders, while (n= 36, 11%) held bachelor's degrees, (n=14, 4.1%) where certificate holders. In addition, (n= 7, 2.2%) of the employees had masters' degrees and higher diploma respectively, (n=3, 0.9%). However, those with high school certificates (n=14, 4.4%) and lastly (n= 1, 0.3%) had CPA Part III qualifications. The results of the study noted that most employees working in private Hospitals in Uasin-Gishu County attained a diploma as the highest education level. This could be attributed to numerous medical training intuitions offering diploma courses in Kenya. Thus, many organizations use educational attainment as a selection criterion not only because education level reflects higher values associated with good citizenship behaviours but also because education level reflects lower values associated with counterproductive behaviours (Berry et al., 2006).

4.4.4 Classification of Respondents by Level of Working Experience

The results in Table 9 show the number of responses by working experience.

Table 9

Classification of the Respondents by Working Experience

Years Served in the Hospital	Frequency	Percent
Less than 1 year	34	10.7
1-5 years	225	71.0
6-10 years	52	16.4
11-15 years	2	0.6
16-20 years	3	0.9
above 25 years	1	0.3
Total	317	100.0

Source: Research Data (2023)

From the findings, most of the employees in the private hospital had (n= 225, 71.0%), followed by those with less than one year experience (n= 34, 10.7%), while (n= 52, 16.4%) had working experience of between 6-10 years. However, the study finding also revealed that (n=2, 0.6%) of the employees had served in the hospital between 11-15 years, while 16-10 years was (n=3, 0.9%). Generally, the employees who had a working experience of 11 years and above comprised (n = 6, 1.8%). These findings, therefore, implied that most of the employees had worked for a period of less than 10 years which could be attributed to employee turnover due to job security. Therefore, Work experience is more likely to provide tacit, practical knowledge than formal education. Work experience, when combined with the in-depth, analytical knowledge provided by formal education, may improve job performance even further. Furthermore, the knowledge and skills required for effective job performance are likely to be strengthened and sharpened over years of service and trial and error learning (Schmidt & Finan, 1986).

4.4.5 Classification of Respondents by Current Position at the Hospital

The results in Table 10 represents the sampled respondents classified based on Current Position held at the Hospital.

Table 10

Official Current Position at the Hospital

Official Current Position at the Hospital	Frequency	Per cent
Patient attendant	85	26.8
Dental Assistant	19	6.0
Nurse	93	29.3
Pharmaceutical technologist	23	7.3
Administrator	1	0.3
Lab Technologist	18	5.7
Physiotherapist	25	7.9
Clinical Officer	18	5.7
Accountant	3	0.9
Psychological counsellor	1	0.3
Receptionist	3	0.9
Accounts Assistant	1	0.3
Medical superintendent	1	0.3
Radiologist	16	5.0
Nutritionist	8	2.5
Theatre Technician	2	0.6
Total	317	100.0

Source: Research Data (2023)

From the findings, it is indicative that 26.8% were patient attendants, 6.0% dental assistants, 29.3% nurses, 7.3% pharmaceutical technologists, 0.3% administrators, 5.7% lab technologists, 7.9% physiotherapists, 5.7% clinical officers, 0.9% accountants, 0.3% psychological counsellors, 0.6% laboratory technologists, 0.9% receptionists, 0.3% accounts assistants, 0.3% medical superintendents, 5% radiologists, 2.5% nutritionists and 0.6% theatre technicians. Further, the results indicated that majority of the employee

serving patients using biometric authentication systems in private hospitals in Uasin-Gishu County served in the positions of nurse and patient attendant. This could be attributed to the nature of their work which involves dealing directly with majority of the patients.

4.5 Characteristics of the Key Informants

The researcher asked the key informants for some basic information in section A of the interview schedule. The outcomes were as follows:

4.5.1 Classification of Key Informants by Demographic Features

Table 11 shows the demographic features of the key informants as captured in the interview schedule. The key informants were used to give responses regarding the interview schedule.

Table 11

Demographic Features of the Key Informants

Gender	Frequency	Per cent
Male	5	41.7
Female	7	58.3
Total	12	100.0
Age		
27-35 years	6	50.0
36-44 years	2	16.7
45-53 years	3	25.0
54 years and above	1	8.3
Total	12	100.0
Years Spent in Hospital		
1-3 years	4	33.3
4-6 years	1	8.3
7-9 years	1	8.3
10-12 years	1	8.3
13 years and above	5	41.7
Total	12	100.0
Position Held in Hospital		
Doctor	8	66.7
Pharmacist	1	8.3
Administrator	3	25.0
Total	12	100.0

Source: Research Data (2023)

The study's results in Table 11 shows that (n=7, 58%) of the key informants were female while (n=5, 41.7%) were male. In terms of age, the results of the study indicate that (n=6, 50%) of the respondents were aged between 27-35 years, (n=3, 25%) aged between 45-53 years, while (n=2, 16.7%) aged between 36-44 years and finally (n=1, 8.3%) of the respondents were 54 years old and above. In terms of Years spent at the

hospital, the results of the study revealed that (n=5, 41.7%) of the respondents had spent 13 years and above in the respective hospitals, while (n=4, 33.3%) of the respondents had spent 1-3 years in the hospital and (n=1, 8, 3%) of the respondents had both spent between 4-6 years, 7-9 years, and 10-12 years in the hospitals respectively. Finally, in terms of the position held in the hospital, (n=8, 66.7%) ofthe respondents indicated that they held the position as a medical doctor, while (n=3, 25%) as administrator and finally (n=1, 8.3%) as a pharmacist.

4.5.2 Time Management Practices Implemented in Hospitals

Table 12 shows time management practices implemented in hospitals as stated by the key informants captured in the interview schedule. Under time management six themes was identified.

Table 12

Time Management Practices Implemented in the Hospital

Time Management Practices	Frequency	Percent
Planning	3	25.00
Goal setting	3	25.00
Delegation	2	16.66
work scheduling	3	25.00
prioritisation	1	08.33
Total	12	100.00

Source: Research Data (2023)

The results of the study in table 4.8 above indicate that majority of the key informant (n= 3, 25.00%) of respondents cited planning, goal setting and work scheduling as time management practices had been implemented in their hospitals. In addition, (n= 2,

16.66%) of the respondents cited delegation while (n=1, 0.8%) cited prioritization as a time management practice implemented in their hospitals. Therefore, Planning, Goal setting, Delegation, work scheduling and prioritization practices are essential for organizations. Time management involves using time in an optimal way in order to increase productivity and success. It requires managing work schedules to attain the organizational goals through advanced planning and implementation. Therefore, time management is a critical asset for both organizations and professionals since it concerns the discovery and application of efficient methods of assignments completion within a specified period (Sahito et al., 2016).

4.5.3 Strategies Implemented in the Hospital

The researcher was interested in ascertaining the different types of strategies used in hospitals to enhance employee performance. Generally, table 4.9 below shows strategies implemented in the hospital to enhance employee performance.

Table 13

Strategies Implemented Among the Hospitals

	Frequency	Per cent
Clear communication of expectations	1	8.3
Consistent appraisals performance	2	16.7
Utilise the right technologies like biometric information systems	9	75.0
Total	12	100.0

Source: Research Data (2023)

The results indicate that (n=9, 75%) of the respondents cited utilisation of the right technologies like biometric information systems as a strategy implemented in the hospital to enhance employee performance, and (n=2, 16.7%) of the Key informant cited

consistent appraisals performance and finally (n=1, 8.3%) of the Key informant cited clear communication of expectations as one of the strategies employed by the various hospitals in order to enhance employee performance. In the same vein, Arvanitis et al. (2016) describe time management as a set of principles, practices and systems that help to use your time to accomplish what you want. It is the art of planning, organising, scheduling, budgeting, and evaluating when and how long it takes to perform an activity and control time rather than letting time control us. It is the key to high-performance levels and affecting not only the productivity of employees but also helps to cope with pressure more efficiently.

4.5.4 Key Aspects of Employee Performance

Table 14 below shows the main dimensions of employee performance.

Table 14

Main Aspects of Employee Performance

	Frequency	Percent
Responsiveness	2	16.7
Customer satisfaction	2	16.7
Productivity	6	50.0
Promptness of service	2	16.7
Total	12	100.0

Source: Research Data (2023)

The results indicates that majority of the respondents (n=6, 50.7%) viewed employee productivity activities at the workplace as part of the main dimensional aspect of employee performance. However, (n=2, 16.7%) cited responsiveness, customer satisfaction and prompt service, respectively, as the main aspects of employee performance in hospitals. Therefore, employee productivity significantly contributed to

employee performance when viewed as part of a rewards and benefits scheme. Therefore, employee effectiveness is characterised by the quality of the products. However, effectiveness and efficiency are exclusive, yet, at the same time, they influence each other; it is important to ensure success in both areas (Bartuseviciene & Sakalyte, 2013). Hence, employee performance can be measured by efficiency and effectiveness since both indicators determine the achievement of employees. Consequently, it is reasonable to consider efficiency and effectiveness, which are characterised by the quantity and quality of products respectively, as indicators of employee performance.

4.6 Assumptions of Multiple Regression Analysis

According to Williams et al. (2013), it is important to test for assumptions when multiple linear regressions are used to test for the hypothesis. Testing assumptions enables the researcher to verify the essence of the data and to identify the relevant study model that guarantees impartial, reliable, and efficient estimates (Yu, 2010). Before a complete analysis can be performed, the basic assumption of linear regression concerning the original data must be made (Sevier, 1957). Ignoring the regression assumption contributes to wrong validity estimates (Antonakis & Deitz, 2011). Regression analysis requires at least two independent variables, which can be normal, ordinal, or interval/ratio level variables. The assumptions of regression analysis that were identified as a primary concern in the research include linearity, Multicollinearity, homoscedasticity, normality, and collinearity.

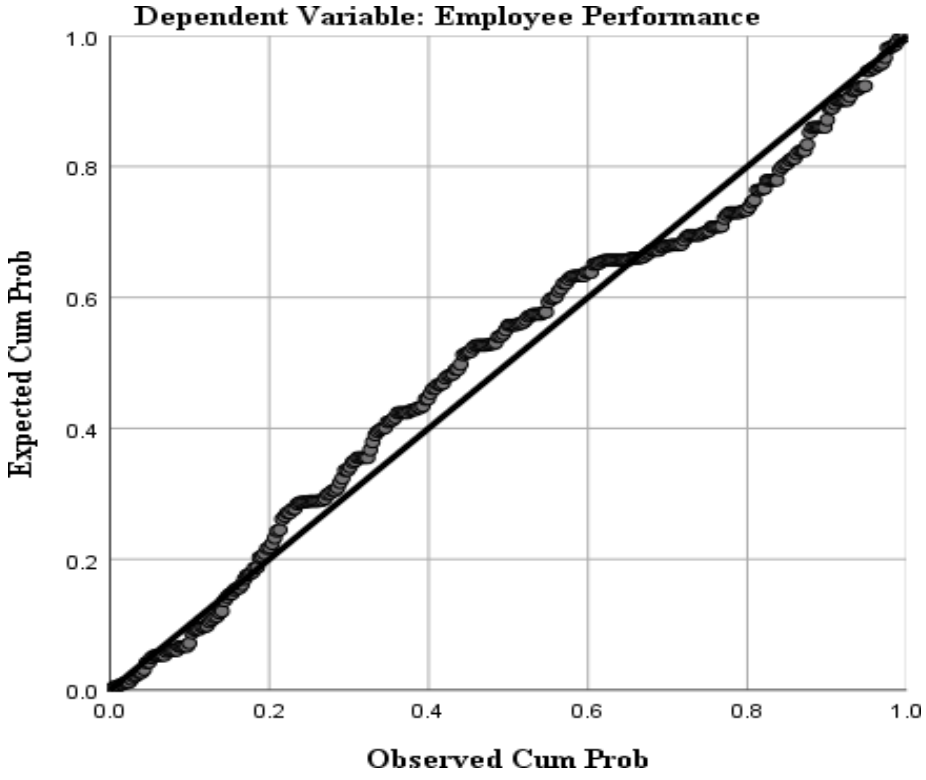
4.6.1 Test for Normality

Multiple regressions assume that variables have normal distributions (Darlington, 1969; Osborne & Waters, 2002). This means the errors are normally distributed and that a plot

of values of the residuals will approximate a normal curve (Keith, 2006). The assumption is based on the shape of normal distribution and gives the researcher knowledge about what values to expect (Keith, 2006). Normality is the shape of the data. Therefore, the normality test between the independent and dependent variables were done. The distribution of scores underlying the relationship between time management practices in private hospitals and employee performance was checked, as shown in Figure 4 below.

Figure 4

Employee Performance against Time Management Practices



Linearity refers to the rate of change or of amount change between scores on two variables that is constant for the whole range of scores for the variables. From figure 6 above, the graphical methods were used to examine the relationship between the variables within the trend straight line. The findings showed a significant linear relationship between all the independent variables and dependent variables (employee

performance), thus, non-violation of the assumption. This connotes the linearity of the predictor variables with respect to the dependent variable and thus allows for further analysis.

4.6.2 Test for Multicollinearity

Table 15 presents the results of the multicollinearity test. A multicollinearity test was carried out to establish if one or more predictor variables in a multiple regression model were highly correlated so that one could be linearly predicted from the others. Variance Inflation Factor (VIF) and coefficient of correlation between variables were used to test for Multicollinearity.

Table 15

Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Work planning	.514	1.946
Work organisation	.295	3.392
Goal setting	.342	2.925
Work scheduling	.367	2.725
BAS	.524	1.908

a. Dependent Variable: Employee performance

Source: Research Data (2023)

Table 15 results showed that the entire variables had VIF, which were greater than 1 but less than 10 (Haire et al., 2006). Hence, the conclusion that there was no multicollinearity. Also, all the correlation coefficients were less than 0.7 in table 15, as Haire et al. (2006) recommended. In addition, the results in Table 4.10 reveal that Multicollinearity does not exist between the independent variables because the VIF value

is not above 10. Similarly, the Tolerance value for the independent variable is not less than 0.10, as recommended by Haire et al. (2006).

4.6.3 Test for Linearity and Homoscedasticity

Homoscedasticity is the speculation that the dependent variable exhibits the same amounts of variance across the range of values for an independent variable. The study used scatter plots to test for assumptions of linearity and homoscedasticity between work planning and employee performances. Scores for work planning were plotted along the X (horizontal) axis, and the scores for employee performance were plotted on the Y (vertical) axis. The scatter plot provides information on the nature of the relationship between variables.

4.6.3.1 Employee performance and Work Planning

Figure 5 presents the results of the analysis on Employee performance against Work Planning to test for assumptions of linearity and homoscedasticity between these variables.

Figure 5

Employee Performance against Work planning

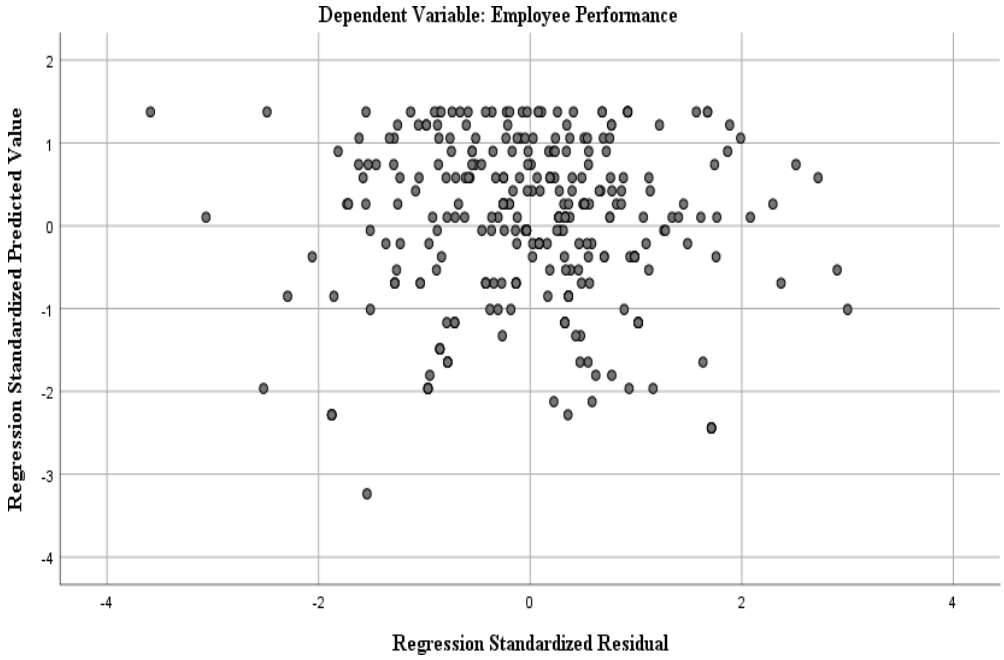
Results in Figure 5 show the distribution of scores for employee performance (standardised residuals) against work planning (standardised predictor) randomly dispersed around zero.

4.6.3.2 Employee Performance and Work Organisation

The scatter plot provides information on the nature of the relationship between the variables. Figure 6 below presents the results of the analysis of Employee performance against work organization.

Figure 6

Employee Performance against Work Organisation



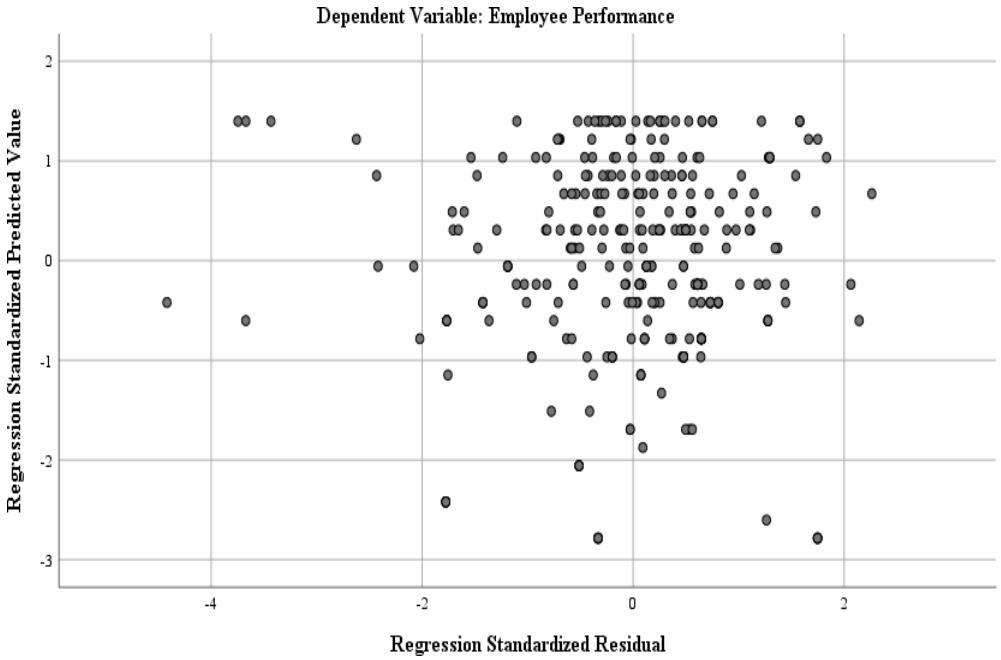
Results in Figure 6 show the distribution of scores for employee performance (standardised residuals) against work organisation (standardised predictor) randomly dispersed around zero. The upward trend indicates a positive relationship: high work organisation scores (X) are associated with high scores on employee performance (Y). This implies that there wasa positive linear relationship between work organisation and employee performance. Using a scatter plot, assumptions of linearity and homoscedasticity were checked between work goal setting and employee performances. Scores for work goal setting were plotted along theX (horizontal) axis, and the scores for employee performance were plotted on the Y (vertical) axis.

4.6.3.3 Employee Performance and Work Goal Setting

The scatter plot provides information on the nature of the relationship between Employee performance and Work Goal Setting.

Figure 7

Employee Performance against Work Goal Setting



Results in Figure 7 shows the distribution of scores for employee performance (standardised residuals) against work goal setting (standardised predictor) randomly dispersed around zero. The upward trend indicates a positive relationship: high work goal setting (X) scores are associated with high scores on employee performance (Y). This implies that there was a positive linear relationship between work goal setting and employee performances. Using a scatter plot, regression of linearity and homoscedasticity were checked between work scheduling and employee performances. Scores for work goal setting were plotted along the X (horizontal) axis, and the scores for employee performance were plotted on the Y (vertical) axis. The scatter plot provides information on the nature of the relationship between the variables.

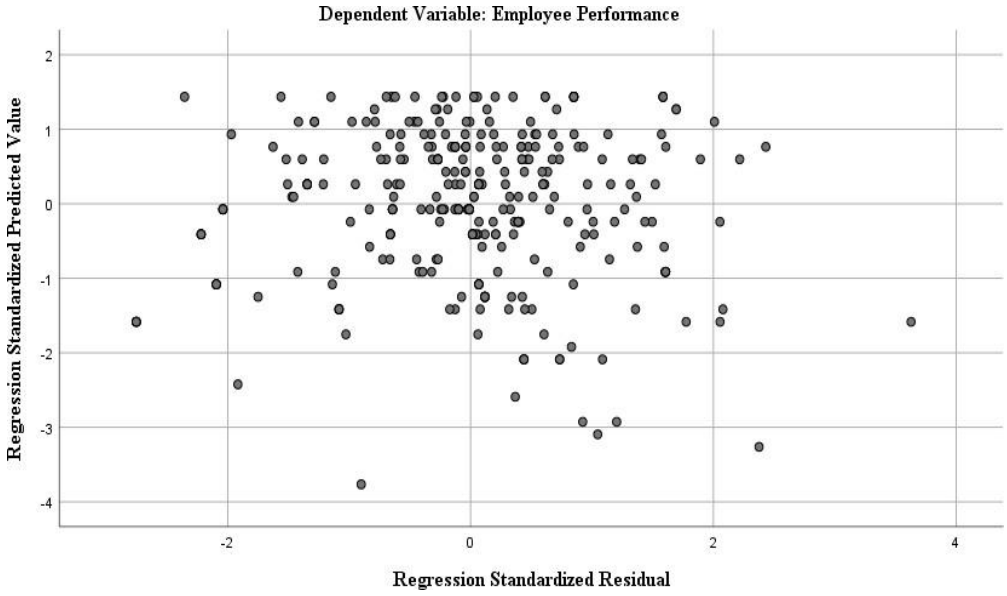
4.6.3.4 Employee Performance and Work Scheduling

The scatter plot provides information on the nature of the relationship between

Employee performance and Work Scheduling.

Figure 8

Employee Performance against Work Scheduling



Results in Figure 8 show the distribution of scores for employee performance (standardised residuals) against work scheduling (standardised predictor) randomly dispersed around zero. The upward trend indicates a positive relationship: high work scheduling (X) scores are associated with high scores on employee performance (Y). This implies that there was a positive linear relationship between work scheduling and employee performance. Using a scatter plot, regression of linearity and homoscedasticity were checked between BAS and employee performances. Scores for BAS were plotted along the X (horizontal) axis, and the scores for employee performance were plotted on the Y (vertical) axis. The scatterplot provides information on the nature of the relationship between the variables.

4.6.3.5 Employee Performance and Biometric Authentication System (BAS)

The scatter plot provides information on the nature of the relationship between Employee

performance and BAS. Figure 9 below presents the results of the analysis of Employee performance against BAS.

Figure 9

Employee performance against BAS

Results in Figure 9 shows the distribution of scores for employee performance (standardised residuals) against BAS (standardised predictor) randomly dispersed around zero. The upward trend indicates a positive relationship: high BAS scores (X) are associated with high scores on employee performance (Y). This implies that there was a positive linear relationship between BAS and employee performances.

4.7 Descriptive Statistics with respect to Variables

In this section, various mean scores (M), standard deviation (SD), Skewness, and Kurtosis summarized for all the measurement attributes related to time management practices (Work planning, work organization, goal setting and work scheduling) and

those of employee performance (Employee satisfaction, employees' productivity, employee motivation and customer satisfaction). The results are displayed in the section below.

4.7.1 Work Planning

The response variable of the study was Work Planning. The results are presented in Table 16 below.

Table 16

Work Planning

Elements of work planning	N	Mean	Std. Dev
Employees in the hospital participate in the planning process	317	3.9685	.99633
Hospital employees possess essential time management skills	317	4.0599	.93433
Employees at these hospitals control personal and hospital time to complete tasks	317	4.0789	.92269
Planning for time management makes employees work smarter and efficient	317	4.1640	.95047
Employees working in the hospital have different skills and strategies for time management	317	4.1893	.80866
The need for effective performance makes the planning of time for employees a necessity	317	4.2019	.84021
The hospital employees keep a list of things to do	317	4.2776	.83357
In this hospital, employees are aware of the importance of planning for time available to do a task	317	4.2902	.83685
Planning helps healthcare workers become more conscious of their duties and responsibilities	317	4.3344	.80849
Work Planning		4.1738	0.8812

Source: Research Data (2023)

The results indicate that most respondents agreed that hospital employees participate in the organization's planning process (M = 3.9685, SD = .99633). Besides planning, most

of the employees agreed that they possessed essential time management skills (M = 4.059, SD = .9343), which enabled them to accomplish the task within the stipulated time. The result further suggests that, for an organization to achieve effectiveness, employees should control personal and hospital time to complete tasks (M = 4.078, SD = .9226). Lastly, it was established that employees are aware of the importance of planning for the time available to do a task (M = 4.2902, SD = .83685). Therefore, the employees could accomplish their tasks within the stipulated period. In regards to employees' skills, the majority agreed that they had different skills and strategies required for time management (M = 4.189, SD = .8084). Generally, the results in Table 15 shows that the majority of the participants agreed (mean score of approximately 4.1738) that they participate in the planning process, hospital employees possess essential time management skills, employees control personal and hospital time to complete tasks, planning for time management makes employees work smarter and efficient, employees working in the hospital have different skills and strategies for time management, the need for effective performance makes the planning of time for employees a necessity, the hospital employees keep a list of things to do, employees are aware of the importance of planning for time available to do a task, planning helps healthcare workers more conscious of their duties and responsibilities. This could be attributed to the implementation of Work planning strategies by hospital management. The results also showed that the standard deviation ranges from 0.80849 to 0.99633 with an overall standard deviation (SD =0.88128). These were evidence that the dispersion was distributed around the mean and hence depicted a normal distribution.

4.7.2 Work Organization

The response variable of the study was work organisation. The results are presented in Table 17 below.

Table 17

Work Organisation

N= 317	Mean	Std. Dev.
Each supervisor has the right number of employees who report to her or him	3.9148	1.05348
The hospital has standards for breaking down complex tasks into simple tasks	3.9432	.86599
There are clear lines of communication in the workplace	4.0252	.97727
The hospital employees organise paperwork	4.0284	.92904
There is adequate cooperation among employees of the hospital	4.0315	1.00266
Adequate authority is given to employees to enable decision-making on delegated work	4.0442	.89191
The hospital structure is clear to all employees	4.0883	.97683
Duties and responsibilities are delegated to save time	4.0915	1.01935
Employees are well informed on who is responsible for what	4.1861	.95470
Work Organisation	7.27064	1.734246

Source: Research Data (2023)

The results indicate that most respondents agreed that the hospital had standards for breaking complex tasks into simple ones (M = 3.9432, SD = .86599). In addition, it was also established that apart from simplifying tasks, adequate authority is also given to employees to enable decision-making on delegated work to ensure effectiveness (M = 4.0422, SD = .89199). The results further showed that majority of the respondent agreed that there are clear lines of communication at the workplace (M = 4.0252, SD = .89199). The hospital employees organize paperwork (M = 4.0284, SD = .92904). There is adequate cooperation among employees of the hospital (M = 4.0315, SD = 1.00266) Adequate authority is given to employees to enable decision-making on delegated work (M = 4.0442, SD = .89191). The hospital structure is clear to all employees (M = 4.0883,

SD = .97683) Duties and responsibilities are delegated to save time (M = 4.0915, SD = 1.01935).

Further, the result in Table 4.1217 indicated that the employees are well informed on who is responsible for what (M = 4.1861, SD = .95470). The results also show that the participants in the study agreed (mean score of approximately 4) with the following elements of work organisation; the supervisor has the right number of employees who report to her or him, the hospital has standards for breaking down complex tasks into simple tasks, there are clear lines of communication at the workplace, the hospital employees organise paperwork, there is adequate cooperation among employees of the hospital, adequate authority is given to employees to enable decision-making on delegated work, the hospital structure is clear to all employees.

4.7.3 Work Goal Setting

The response variable of the study was goal setting. The results are presented in Table 18 below.

Table 18

Goal Setting

N=317	Mean	Std. Dev.
Employees at this hospital set short-term goals to help achieve long-term goals	3.8517	.94807
The hospital sets datelines for each task	3.9495	.92980
Employees at this hospital have clear, specific, and challenging work	4.0662	.88520
The hospital has goals set for every department	4.1199	.82953
The employees feel they have the capacity to do their jobs	4.1609	.80504
Adequate time is allocated for employees to complete their work	4.1640	.74941
All tasks are accountable in terms of time allocated	4.1956	.93096
Setting goals enhances the probability of success	4.3880	.76983
Setting goals saves time	4.4164	.68675
Goal Setting	4.1458	0.837177

Source: Research Data (2023)

The results indicate that most respondents agreed that the hospital employees set short-term goals to help achieve long-term goals (M = 3.8517, SD = .94807). The result suggests that employees agreed that the hospital sets datelines for each task (M = 3.9495, SD = .92980). The results further showed that majority of the respondents agreed that employees at the hospital have clear, specific, and challenging work goals (M = 4.0662, SD = .88520). The hospital has goals set for every department (M = 4.1199, SD = .92904). The employees feel they have the capacity to do their jobs (M = 4.1609, SD = 80504). Adequate time is allocated for employees to complete their work (M = 4.1640, SD = .74941). All tasks are accountable in terms of time allocated (M = 4.1956, SD = .93096). However, goals ssetting enhances probability of success (M = 4.3880, SD = .76983. Setting goals saves time (M = 4.4164, SD = .68675). The results of the study in Table 18 shows that the participants in the study agreed (mean score of approximately 4). Table 4.12 with the following elements of goal settings; employees at the hospital set

short-term goals to help achieve long-term goals, hospital sets datelines for each task, employees at hospital have clear, specific and challenging work goals, the hospital has goals set for every department, employees feel they have the capacity to do their jobs, adequate time is allocated for employees to complete their work, all tasks are accountable in terms of time allocated, setting goals enhances the probability of success and setting goals saves time.

4.7.4 Work Scheduling

The response variable of the study was Work Scheduling. The results are presented in Table 19 below.

Table 19

Work Scheduling

N=317	Mean	Std. Dev.
The hospital has mechanisms for re-scheduling wasted time	3.7792	1.09738
The hospital employees write reminder notes to achieve efficiency	3.8675	1.04705
Supervisors ensure that there is no work overload for employees	3.9748	1.03392
The hospital has a mechanism to review activities	3.9748	.95433
The hospital has policies to avoid interruptions that waste time	4.0536	.94146
The hospital has policies on setting priorities for tasks	4.0789	.91580
The hospital employees prioritise tasks	4.1073	.89009
There are clear methods of work schedule	4.2334	.83576
The work schedule is aimed at saving time	4.3754	.74699
Work Scheduling	7.28898	1.692556

Source: Research Data (2023)

The results indicate that majority of the respondent agreed that the hospital has mechanisms for re-scheduling wasted time (M = 3.7792, D = 1.09738). The hospital employees write reminder notes to achieve efficiency (M = 3.8675, SD = 1.04705). The results further showed that majority of the respondent agreed that supervisors ensure that there is no work overload for employees (M = 3.9748, SD = 1.03392). The hospital has a mechanism to review activities (M = 3.9748, SD=.95433). In addition, the hospital has policies to avoid interruptions that waste time (M = 4.0536, SD = .94146). However, the hospital has policies on setting priorities for tasks (M = 4.0789, SD = .91580). The hospital employees prioritize tasks (M = 4.1073, SD = .89009). The study findings also revealed clear work scheduling methods (M = 4.2334, SD = .83576). In addition, work scheduling is aimed at saving time (M = 4.3754, SD =.74699). The results of the study in Table 18 shows that the participants in the study agreed (mean score of approximately 4) with the following elements of work schedule; the hospital has mechanisms for re-scheduling wasted time, hospital employees write reminder notes to achieve efficiency, supervisors ensure that there is no work overload for employees, the hospital has a mechanism to review activities, the hospital has policies to avoid interruptions that waste time, the hospital has policies on setting priorities for tasks, hospital employees prioritise tasks, there are clear methods of work scheduling and work schedule is aimed at saving time.

4.7.5 Employee Performance

The responses to employee performance were analysed using mean scores and standard deviations. Table 19 to Table 20 shows the descriptive results of employee performance (Employee satisfaction, employee productivity, employee motivation and customer satisfaction).

Table 20

Employee Satisfaction

N=317	Mean	Std. Dev.
Employees are satisfied with the reward system at the hospital	3.8076	1.12123
Employees are satisfied with the way their complaints are handled	3.8360	1.07837
Employees are happy about the way they are managed	3.8454	1.03335
There is a good relationship between the employees and other Supervisors	3.9243	1.03756
There is a high level of self-esteem among employees- relevant	4.0347	1.00413
Employees feel that the employer trusts them	4.0726	0.95687
Employee Satisfaction	3.8076	1.12123

Source: Research Data (2023)

Grounded on the results of the study in Table 20, the study reveals that the participants agreed (mean score of approximately 4) with the following elements of employee satisfaction; The reward system at the hospital is good, employee complaints are handled promptly to their satisfaction, employees are happy about the way they are managed, there is a good relationship between the employees and other supervisors, there is a high level of self-esteem among employees and employees feel that the employer trusts them. Table 21 shows the descriptive results of elements of employee productivity.

Table 21

Employee Productivity

N=317	Mean	Std. Dev.
Employee absenteeism is at an acceptable level	3.8612	1.01864
Time taken by employees to serve customers has reduced	3.9590	0.97511
There is high duty attendance among employees at the hospital	3.9748	0.92743
The average number of patients attended per day has increased	4.1136	0.81114
There is an efficient use of resources by employees	4.1735	0.85213
Employee meets their set job performance targets	4.1830	0.84079
Employee Productivity	4.0441	0.9042

Source: Research Data (2023)

The results of the study in Table 21 shows that the participants in the study agreed (mean score of approximately 4.044183) with the following elements of employee productivity; time taken by employees to serve customers has reduced, there is high duty attendance among employees at the hospital, the average number of patients attended per day has increased, there is an efficient use of resources by employees, the employee meets their set job performance targets, and there is a high level of job discipline among employees in the hospital. Table 22 shows the descriptive results of elements of Employee Motivation.

Table 22

Employee Motivation

N=317	Mean	Std. Dev.
Employees are highly motivated since promotion is based on merit	3.7603	.96748
There is competitive remuneration for employees, which enhances employee's motivation	3.8864	.90342
Employees at every level are motivated to perform at a higher level.	3.9369	.84707
Employees are committed to their work	4.0852	.89071
The motivation of employees is enhanced through teamwork	4.1798	.78907
The existence of clear career progression in the hospital motivates	4.2114	.89095
Employee Motivation	4.01	0.88145

Source: Research Data (2023)

The results of the study in Table 22 shows that the participants in the study agreed (mean score of approximately 4.01) with the following elements of employee productivity; Employees are highly motivated since promotion is based on merit, there's competitive remuneration of employees, which enhances employees motivation, employees at every level are motivated to perform at a higher level, motivation of employees is enhanced through teamwork, and the existence of clear career progression in the hospital motivates employees. Table 23 shows thedescriptive results of elements of customer satisfaction.

Table 23

Customer Satisfaction

N=317	Mean	Std. Dev.
Employees fulfil and even exceed customers' expectations	3.7666	1.00745
Employees respond quickly to customers' complaints	3.7855	.77829
Employees practice continuous quality improvement in service a provision in line with changing customer preferences	3.8076	.87739
There is continuous improvement in employees service provision in line with changing customer preferences	3.8612	.90339
Employees' customer service skills are improved through continuous customer care training to serve customers better	3.8675	1.00069
Employees listen to the feedback of all kinds from customers	4.0631	.81664
Employees' standards of service have led to customer loyalty	4.0852	.89778
Employees meet goals set in the area of customer service	4.1514	.83577
Customer Satisfaction	3.9235	0.8897

Source: Research Data (2023)

Table 23 shows that participants in the study agreed (mean score of approximately 3.9235) with the following elements of customer satisfaction; Employees fulfil and even exceed customers' expectations, employees respond quickly to customers' complaints, and employees practice continuous quality improvement in service provision in line with changing customer preferences, there is continuous improvement in employees service provision in line with changing customer preferences, employees customer service skills are improved through continuous customer care training to serve customers better, employees listen to the feedback of all kinds from customers, employees standards of service has led to customer loyalty, and employees meet goals set in the

area of customer service.

4.7.6 Biometric Authentication System

The response variable of the study was a biometric authentication system. The result is presented in Table 24 below.

Table 24

Biometric Authentication System

N=317	Mean	Std. Dev
BAS ensures staff report work and leave on Time	3.8896	.92287
The use of BAS has improved employee sensitivity to the use of time	3.9180	.97582
Biometrics have improved patient identification	3.9338	.93391
Biometrics are useful in emergency case	3.9464	.97044
Employees understand the purpose of using BAS	3.9558	.96026
Biometrics ensure staff are conscious of the value of time at work	3.9685	.97266
The use of biometrics has reduced fraud	4.0379	.84108
Biometrics have enhanced the privacy of patients	4.0410	.96204
Biometrics have enhanced the security of patient‟ records	4.0662	.87441
Biometric Authentication System	3.97302	0.93483

Source: Research Data (2023).

The result indicates that most of the respondents agreed that the biometrics authentication system ensures staff report on and leave work on time (M =3.8896, SD=.92287). The use of BAS has improved employee sensitivity to the use of time productively (M=3.9180, SD= .975822). The results further showed that majority of the respondent agreed that Biometrics have improved patient identification (M= 3.9338,

SD=.93391). Biometrics are useful in emergency cases where patients may be in a position not to identify themselves (M= 3.9464, SD= 1.07044). Employees understand the purpose of using BAS (M= 3.9558, SD= .96026).

It was further established that biometric systems ensure staff are conscious of the value of time at work (M= 3.9685, SD= .97266). In addition, the results indicate that most of the respondents agreed that the use of a biometrics authentication system has reduced fraud (M=4.0379, SD= .84108). Biometrics have enhanced privacy of patients (M= 4.0410, SD= .96204). Biometrics have enhanced the security of patients' records and other records in the hospital (M= 4.0662, SD= .87441). According to the results of the study in Table 24, participants in the study agreed (mean scoreof approximately 4) with the following elements of the biometric authentication system; Biometrics authentication ensures staff report on and leaves work on time, use of BAS has improved employee sensitivity to use of time.

However, productively, biometrics have improved patient identification, biometrics are useful in emergency cases where patients may be in a position not to identify themselves, employees understand the purpose of using BAS, biometrics ensure staff are conscious of the value of time at work, use of biometrics has reduced fraud in the hospital, biometrics have enhanced privacy of patients, and biometrics have enhanced security of patients‟ records and other records in the hospital. The results also showed that the standard deviation ranges from 0.84109 to 0.97582 with an overall standard deviation (SD = 0.93483). These were evidence that the dispersion was distributed around the mean and hence depicted a normal distribution.

4.8 Qualitative Analysis

This section presents the interviews results conducted with key informants in the private hospitals under study. As highlighted in chapter three of the thesis, it was prudent to conduct interviews with key informants to complement the results obtained from the quantitative survey, which was presented in previous sections of this chapter.

The conducting of such interviews was done in conformity with the triangulation approach applied in the study. The design of this study was majorly quantitative. Still, in keeping with the mixed methodology approach highlighted in chapter three, there was a need to undertake a qualitative phase to supplement the quantitative findings. Interviews with key informants were conducted from the twelve private hospitals selected purposively. The interviews were important in providing a deeper understanding of time management practices and employee performance in private hospitals in Uasin-Gishu County. For purposes of maintaining their confidentiality, the respondents requested that they remain anonymous. All the interviews were conducted at the office premises of the key informants so that they were at ease when answering the questions and at their convenience. The interviews were semi-structured, with the researcher asking questions relating to the specific variables of the study. On receiving the responses to the interview questions asked, follow-up questions were asked to clarify any unclear points in the answers provided. The researcher conducted all the interviews, though the research assistant assisted with note-taking. No audio taping was done as requested by the interviewees for ethical reasons. The respondent's understanding of time management practices implemented by the institutions and the link between time management practices and employee performance is presented and discussed in the narratives and descriptive form, with some quotations taken verbatim from the interview write-ups.

Based on the write-ups generated from the interview data, the meanings of comments generated from the interview information provided by the respondents were analysed to answer the research questions. In addition, the respondents' background information was sought to create a clear picture of the data context. The respondents' general understanding of the field of time management is discussed, followed by their perceptions of time management practices implemented in their organisations. Also discussed, is the respondents' understanding of employee performance implemented in their hospitals and the link between time management practices and employee performance. The researcher interviewed twelve key informants using interview schedules. The responses solicited from the interview schedules were analysed qualitatively according to the study themes indicated in Table 25 below.

Table 25

Thematic Areas as Per the Interview Schedule

Dimension	Constructs
Time management practices:	Work planning, work organisation, work goal setting and work schedule
Employee performance:	Employee job satisfaction, employee productivity, and customer satisfaction
Biometric Authentication System:	Employee attendance and payroll preparation

Source: Research Data (2023).

4.8.1 Time management Practices: Work Planning

Most of the key informants in the study acknowledged that work planning activity is implemented with respect to time management practices to enhance better usage of time

by hospital employees towards accomplishing the assigned activity. Respondent A in hospital B cited that;

> *"Work planning has enhanced employee performance in our hospital". "We no longer experience problems with employees or complaints from our customers regarding employee attendance and timely delivery of services".*

Dallasega et al. (2018) assert that all project activities in an organisation must be planned, scheduled, monitored, and controlled in order to achieve excellent time management.

4.8.2 Time Management Practices: Work Organisation

In terms of work organisation practices, ten out of twelve respondents acknowledged that work organisation as a time management practice was implemented in their respective hospitals. Respondent B in hospital C cited that;

> *"By keeping organised, you will save time looking for things and will have more time to work on important tasks. Moreover, as an organisation can improve the flow of communication between you and your team, you can also make your team more productive. After all, better communication leads to better results".*

4.8.3 Time Management Practices: Goal Setting

Goal setting is a time management practice implemented in many hospitals in private hospitals in Uasin-Gishu County; as acknowledged by majority of the key informants in the study, Goals set a realistic timeline for goal accomplishment. Respondent D in hospital C indicated that;

> *"Setting a realistic timeline for all employee's goals will motivate the employees to*

complete the goals within that timeframe because it is written down. "Employees tend to be committed to goals that they have written down".

This suggests that goal setting enhances employee performance which eventually enhances organisational performance. Goal setting motivates employee performance.

4.8.4 Time Management Practices: Work Scheduling

In terms of Work scheduling and prioritisation, most employees agreed that scheduling and prioritising daily tasks is the key to successful time management. Additionally, respondent D said that;

"*To improve task completion, many employees in their organisation start their days with important tasks".*

Respondent A cited that.

"It is important to focus on your priorities to achieve success at work". This culminates in enhancing employee performance.

4.8.5 Employee Performance

The respondents in the study acknowledged that Indicators of effective employee performance include: employee job satisfaction, employee productivity and employee job satisfaction. Indicators of effective employee performance are linked to the specific job functions of the employee (Eliyana & Ma'arif, 2019).

4.8.5.1 Employee Performance: Employee Job Satisfaction

Employee job satisfaction refers to the pleasure that an employee derives from his/her job.

Most of the interviewees indicate that time management by an employee leads to achievement on the job. This means that individual goals are met, and hence, performance is enhanced. Respondent F from hospital G said'

> *"Employees who maintain good attendance at work tend to enjoy job satisfaction because they complete their jobs on time". "Such employees have little or no problems with their supervisors, and hence they are happy".*

4.8.5.2 Employee Performance: Employee Productivity

Employee productivity is a record of the results produced in a specific function/activity during a specific time period associated with organisational objectives Bayley (2010). It is the result produced by an organisation's specific individual or unit. The respondents interviewed indicated a clear understanding of the concept of productivity. Respondent D from hospital E stated;

> *"The use of BAS has raised employee productivity in our hospital as more patients are being attended now than before; this could be due to the fact that employees are aware that the attendance is being monitored and the time on the job will be used to prepare the payroll".*

4.8.5.3 Employee Performance: Customer Satisfaction

Customer satisfaction in any business is important as it helps the organisation retain more customers and improve the process of service delivery. According to Williams et al. (2003), customer satisfaction is a judgment that customers are content when they get that which is promised. The results of the interviews with the respondents in this study revealed that most respondents had a fair understanding of the concept of customer satisfaction. An interviewee from hospital H stated;

"Since we introduced time management practices and the use of BAS, employee attendance has improved, leading to timely service and increased customer loyalty resulting from customer satisfaction."

4.8.6 Biometric Authentication System

A biometric Authentication system refers to a technology for identifying employees as they report or leave the workplace. According to most of the respondents interviewed, private hospitals have invested in this technology to assist them in tracking employee attendance and facilitate accurate payroll preparation.

According to respondent E from hospital D

"The system has proved very useful in reducing complains regarding salaries; furthermore, the hospital is able to track employees' attendance."

4.8.7 Relationship between Time Management Practices and Employee Performance

Every manager who needs to achieve an organisation's goals and objectives needs to have time on his or her hands. Majority of study participants agreed that time is so valuable that it cannot be saved but can only be spent and that once wasted, it cannot be recovered. Time has the following characteristics, according to Kerzner (2017), time is a one-of-a-kind resource; it is the most valuable resource in the universe. Man cannot replace time; it cannot be accumulated like money; it cannot be switched on and off like a machine, and it cannot be accumulated like money.

Time, like any other scarce resource, cannot be stocked like raw materials; it passes at a predetermined rate regardless of what happens; everyone is equally endowed with the same amount of it, regardless of his position; and, like any other scarce resource, it must

be managed and used judiciously. As a result, time management can be thought of as a period, either short or long, in which employees use their time wisely in order to produce results. The study's participants unanimously agreed that time management begins with a commitment to change, which leads to improved employee performance in an organisation. However, according to the study's respondents, other factors, such as the type of task, procedures, and equipment involved in performing a specific task, are said to influence the relationship between time management and employee performance. Most respondents agreed that Biometric technology helped manage time improving employee performance in their institutions.

4.9 Inferential Statistics

The study used Pearson product-moment and linear regression model to analyse the study variables guided by the study's objectives and hypotheses. Correlation analysis shows the nature and magnitude of the relationship between research variables. The coefficients of the correlation analysis are presented in a matrix, as shown in Table 4.20. The regression analysis was conducted to check the model fit and to assess the predictive power of the models, such as forced entry, hierarchical method, and stepwise methods (Field, 2009), the study used the hierarchical regression model because it shows precisely what happens to regression model when different predictor's variables are added. As a result, the researcher was able to systematically consider the contribution of each independent factor in describing the predictive power of the model.

4.9.1 Correlation Analysis

Correlation analysis shows the nature and magnitude of the relationship between research variables. The coefficients of the correlation analysis are presented in a matrix, as shown in Table 4.20. Correlation analysis is the basis for regression analysis;

therefore, it is the key to establishing a relationship in a study. The concept has been described as the degree of relationship between variables (Mukaka, 2012; Asuero et al., 2006). The study used Pearson product-moment correlation coefficient (r) to aid in establishing a correlation between the study variables of interest (Mukaka, 2012). Correlation analysis was done to assess the relationship between the variables of study; work planning, work organisation, goal setting, work scheduling and Biometric authentication system on employee performance, respectively. The study analysed the relationships that are inherent among the independent and dependent variables. Statistically, the correlation coefficient typically ranges between -1.0 and +1.0, so if the correlation (r) is positive, there is a strong relationship, whereas if the correlation (r) is negative, the association between the variables is negative (Samuel & Okey, 2015; Rebekic et al., 2015). The results regarding the correlation analysis are summarised and presented in Table 26 below.

Table 26

Correlation Results

N=317	Employee performance	*ρ-Value*
Work planning	.603**	0.00
Work organisation	.796**	0.00
Work goal setting	.685**	0.00
Work scheduling	.784**	0.00
Biometric Authentication System	.634**	0.00

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

Source: Survey Data (2023)

The findings revealed that work planning was positively and significantly associated with employee performance [r = 0.603, p=0.00, ρ < 0.05. Work planning is expected to influence employee performance by (0.603^2) = 36.36% based on the coefficient of determination; hence, it was suitable for predicting employee performance. This implies that a unit increase in work planning is leads to 0.3636 unit increase in employee performance. The results of the study in Table 4.20 conform to the findings of a study done by Parke et al. (2018) on the influence of daily work planning on employee performance where the results of their study established that daily work planning significantly influences employee performance.

The findings further revealed that work organisation was positively and significantly associated with employee performance [r = 0.796, p=0.00, ρ < 0.05. Therefore, it is expected that the work organisation to influence employee performance by (0.796^2) = 63.36% based on the coefficient of determination; hence, it was suitable for predicting employee performance. This indicates that a unit increase in work organisation is linked with 0.6336 units increase in employee performance. Furthermore, the results of the study in Table 4.20 conform to the findings of a study done by Karatepe (2013) on high-performance work practices and hotel employee performance, where he established that work practices, including work organisation, influence employee performance working in the hotel industry.

Further, work goal setting was positively and significantly correlated to employee performance [r = 0.685, ρ=0.00, p< 0.05, implying that work goal setting is expected to influence employee performance by (0.685^2) = 46.92% based on the coefficient of determination; hence it was suitable in predicting employee performance. The results in Table 4.20 conform to the findings of a study done by Shoaib and Kohli (2017) on

employee engagement and goal setting theory, where the results established asignificant relationship between goal setting and employee performance. In addition, the study findings revealed that work scheduling was positively and significantly correlated to employee performance [r = 0.784, p=0.00, ρ<0.05, implying that work schedule is expected to influence employee performance by (0.784^2) 61.47% based on the coefficient of determination; hence it was suitable in predicting employee performance.

The results of the study in Table 4.20 conform to the findings of a study done by Chow and Chew (2006) on the effect of alternative work schedules on employee performance, where the results of the study established a significant relationship between alternative work schedules and employee performance. Lastly, biometric authentication system was positively correlated with employee performance (r = 0.634, p=0.00, ρ < 0.05, It is expected that biometric authentication system influences organisation employee performance by 40.20% based on the coefficient of determination; hence biometric authentication system was suitable in predicting employee performance.

The results of the study in table 4.20 conform to the findings of a study done by Addo et al. (2020) on the effect of the adoption of biometric attendance technology on the performance of the employee of the Komfo Anokye Teaching Hospital in Kumasi, Ashanti Region, Ghana. The results of the study established a significant relationship between biometric authentication technology and employee performance. This implies that study work planning, work organisation, Goal setting, work scheduling and Biometric authentication system are expected to influence employee performance.

4.9.2 Hypothesis Testing

The regression analysis was conducted to check the model fit and assess the predictive power of the models, such as forced entry, hierarchical method, and stepwise methods

(Field, 2009). The study used a hierarchical regression model because it shows precisely what happens to the regression model when different predictor variables are added.

4.9.2.1 Work Planning and Employee Performance

Table 27, represents the regression results of work planning on employee performance. Work planning accounted for 36.4% of overall variance in employee performance (R^2 = 0.364, Adjusted R^2 = 0.362). Implying that work planning had a 36.4 variation on employee performance.

Table 27

Regression Analysis for Work planning on Employee Performance

	Unstandardised coefficients	standardised coefficients		
	B	Beta	t	Sig.
(Constant)	1.957(.152)		12.906	.000
Predictor Variables				
Work planning	.483(.036)	.603	13.416	.000
Model Summary				
R	.603			
R Square	.364			
Adjusted R Square	.362			
F Change	180.000**			
Durbin-Watson	1.568			

[a] Dependent Variable: Employee performance

*Note: N= 317, Level of significance, *ρ< .05, **ρ< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to three decimal places*

*Source***:** Survey Data (2023)

The ANOVA method showed that the combined estimation of the independent variable, as shown in Table 4.21, was statistically significant [F= 180.000, ρ<0.01 (p=0.00)].

To test the research model's suitability, the distribution F-statistic test was used, using the following two testable hypotheses:

> *H_0: The model is inappropriate when the independent variables do not affect the dependent variables.*
>
> *H_1: The model is appropriate; when the independent variables do affect the dependent variables.*

The model was thus fit to predict employee performance through work planning. The following are the hypothesis for the direct relationship;

H_{01} predicted that there is no significant effect of work planning on employee performance. However, the results presented in Table 4.21 below showed a positive and significant association between work planning and employee performance [β = *.483, p=0.00,* ρ < 0.05]. Therefore, the null hypothesis was rejected. Thus, the study concludes that work planning has a significant influence on employee performance. This implies that the more a hospital adopts or engages in work planning as a way of time management aspect, the more they contribute to influencing employee performance through new ways of achieving the organisational goals by enhancing social goals. This implies that employee performance in private Hospitals in Uasin-Gishu County is positively linked to working planning. The results of the study in Table 20 are consistent with the findings of the study done by Maina and Kwasira (2015) on the role of human resource planning practices on employee performance in county governments in Kenya,

where the finding of their study established a significant relationship between work planning and employee performance.

$$\mathbf{y = 1.957 + 0.483x_1}$$

Where, y is employee performance; x_1 is work planning

4.9.2.2 Work Organization and Employee Performance

Table 28 below, represents the regression results of work organization on employee performance. Work planning accounted for 63.4% of overall variance in employee performance (R^2 =.634, Adjusted R^2 = .633). Implying that work organization had a 63.4 variation on employee performance.

Table 28

Regression Analysis for Work Organization on Employee Performance

	Unstandardised coefficients	standardised coefficients		
	B	Beta	t	Sig.
(Constant)	1.722(.098)		17.629	.000
Predictor Variables				
Work organisation	.556(.024)	.796	23.355	.000
Model Summary				
R	.796			
R Square	. 634			
Adjusted R Square	. 633			
F Change	545.442**			
Durbin-Watson	1.668			
[a] Dependent Variable: Employee performance				
*Note: N= 317, Level of significance, *p< .05, **p< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to three decimal places*				

Source: Survey Data, (2023)

The ANOVA method showed that the combined estimation of the independent variable, as shown in Table 4.22, was statistically significant (F= 545.442, p=0.00, $\rho < 0.05$). The model was thus fit to predict employee performance through work organisation. To test the research model's suitability, the distribution F-statistic test was used, using the following two testable hypotheses:

> *H_0: The model is inappropriate when the independent variables do not affect the dependent variables.*
>
> *H_1: The model is appropriate; when the independent variables do affect the dependent variables.*

Study findings in ANOVA table 4.22 indicated that the above-discussed coefficient of determination was significant as evidence of (Sig. F) ratio of 545.442 with a p-value of 0.000 <0.01 (level of significance), and the study accepted the alternative one. Therefore, the models used are appropriate. The following are the hypothesis for the direct relationship;

H_{02} Stated that there is no significant effect of work organization on employee performance. However, the results presented in Table 4.22 below showed a positive and significant association between work organization and employee performance [$\beta = .556$, $p=0.00$, $\rho < 0.05$]. Therefore, the null hypothesis was rejected. Thus, the study concluded that work organization influenced employee performance. Generally, the more a hospital adopts or engages in work organization as a way of time management aspect, the more they contribute to influencing employee performance. This implies that employee performance in private Hospitals in Uasin-Gishu County is positively associated with

work organization. The results of the study are consistent with the findings of Ramlall (2008), attributing employee performance to work organization. Thus, organization should focus on organizing employee work to enhance their effectiveness and efficiency to impact their performance.

$$\mathbf{y = 1.722 + 0.556}x_2$$

Where, y is employee performance; x_2 is work organization

4.9.2.3 Work Goal Setting and Employee Performance

Table 29 below, represents the regression results of work goal setting on employee performance.

Table 29

Regression Analysis for Work Goal Setting On Employee Performance

	Unstandardised coefficients	Standardised coefficients		
	B	Beta	t	Sig.
(Constant)	1.699(.098)		12.365	.000
Predictor Variables				
Work goal setting	.548(.033)	.685	16.696	.000
Model Summary				
R	.784			
R Square	.469			
Adjusted R Square	.468			
F Change	278.742**			
Durbin-Watson	1.668			

[a] Dependent Variable: Employee performance

*Note: N= 317, Level of significance, *ρ< .05, **ρ< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to three decimal places*

Source: Survey Data, (2023)

The results depicted that work goal setting accounted for approximately 46.9% of the overall variance in employee performance (R^2 =.469, Adjusted R^2 = .468). In addition, the ANOVA method showed that the combined estimation of the independent variable (work goal setting), as shown in Table 4.23 above, was statistically significant [F= 278.742, p=0.00, ρ < 0.05]. The model was thus fit to predict employee performance through work organisation. To test the research model's suitability, the distribution F-statistic test was used, using the following two testable hypotheses:

> *H0: The model is inappropriate when the independent variables do not affect the dependent variables.*
>
> *H1: The model is appropriate; when the independent variables do affect the dependent variables.*

Study findings in ANOVA table 4.23 indicated that the above-discussed coefficient of determination was significant as evidence of (Sig. F) ratio of 278.742 with p value 0.000 <0.01 (level of significance), and the study accepted the alternative one and therefore, the models used is appropriate. The following are the hypothesis for the direct relationship;

H_{03} predicted that there is no significant effect of work goal setting on employee performance. However, the results presented in Table 4.23 above showed a positive and significant association between work goal setting and employee performance [*β = .548, p=0.00, ρ* < 0.05]. Therefore, the null hypothesis was rejected. Thus, the study concludes that goal setting influence employee performance positively. Essentially, the more a hospital adopts or engages in goal setting as a way of time management aspect, the more they contribute to influencing employee performance. This implies that employee performance in private Hospitals in Uasin-Gishu County is positively associated with

work goal setting. The results of the study are consistent with the findings of the study done by Van der Hoek et al. (2018) on goal setting in teams and team performance in the public sector, where the results of their study established a significant relationship between goal setting and team performance.

$$\mathbf{y = 1.699 + 0.548}x_3$$

Where, y is employee performance; x_3 is goal setting

4.9.2.4 Work Scheduling and Employee Performance

Table 30 below, represents the regression results of work scheduling on employee performance. The results depicted that work scheduling accounted for approximately 61.5% of the overall variance in employee performance (R^2 =.615, Adjusted R^2 = .613).

Table 30

Regression Results for Work Scheduling on Employee Performance

	Unstandardised coefficients	standardised coefficients		
	B	Beta	t	Sig.
(Constant)	1.629(.106)		15.396	.000
Predictor Variables				
Work Scheduling	.578(.026)	.784	22.416	.000
Model Summary				
R	.784			
R Square	.615			
Adjusted R Square	.613			
F Change	502.457**			
Durbin-Watson	1.768			

[a] Dependent Variable: Employee performance

*Note: N= 317, Level of significance, *ρ< .05, **ρ< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to three decimal places*

Source: Survey Data, (2023)

Additionally, to test the research model's suitability, the distribution F-statistic test was used, using the following two testable hypotheses:

> *H_0: The model is inappropriate when the independent variables do not affect the dependent variables.*
>
> *fH_1: The model is appropriate; when the independent variables do affect the dependent variables.*

Study findings in ANOVA table 4.24 indicated that the above-discussed coefficient of determination was significant as evidence of (Sig. F) ratio of 502.457 with a p-value of 0.000 <0.05 (level of significance), and the study accepted the alternative one.

Therefore, the models used was appropriate in predict employee performance through work schedule [F= 502.457, $\rho < 0.05$ (p=0.00)]. The following are the hypothesis for the direct relationship;

H_{04} predicted that there is no significant effect of work scheduling on employee performance. However, the results presented in Table 4.24 above depicted a positive and significant association between work scheduling and employee performance [β = .578, *p=0.00*, $\rho < 0.05$]. Therefore, the null hypothesis was rejected. Thus, the study concluded that work scheduling influence employee performance positively. Therefore, as hospital engage in work scheduling as a time management aspect, the more it contributes to influencing employee performance through enhancing efficiency and effectiveness. This implies that employee performance in private Hospitals in Uasin-Gishu County is positively associated with work schedules. The results of the study are consistent with

the findings of Siengthai and Pila-Ngarm (2016) on the interaction effect of job redesign and job satisfaction on employee performance, where the results of their study revealed a significant effect of job redesign or work schedule on employee performance.

$$\mathbf{y = 1.699 + 0.578x_4}$$

Where, y is employee performance; x_4 is work scheduling

4.9.2.5 Biometric Authentication System and Employee Performance

Table 31

Regression Analysis for Biometric Authentication System

	Unstandardised coefficients	standardised coefficients		
	B	Beta	t	Sig.
(Constant)	2.298(.117)		19.661	.000
Predictor Variables				
BAS	.421(.029)	.634	14.539	.000
Model Summary				
R	.634			
R Square	.402			
Adjusted R Square	.400			
F Change	211.385**			
Durbin-Watson	1.569			
[a] Dependent Variable: Employee performance				

Note: N= 317, BAS = *Biometric Authentication System, Level of significance, *ρ< .05, **ρ< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to three decimal places*

Source: Survey Data, (2023)

The study carried out a multiple linear regression analysis to regress Biometric Authentication System, the independent variable, with employee performance. The independent Variable accounted for approximately 40.2% of the overall variance in employee performance (R^2 =.402, Adjusted R^2 = .400). The ANOVA method showed

that the combined estimation of the independent variable (Biometric Authentication System) as shown in Table 4.25 above was statistically significant [F= 211.385, p=0.00, $\rho < 0.05$]. The model was thus fit to predict employee performance through work schedule. To test the research model, the distribution F-statistic test was used, using the following two testable hypotheses:

> *H_0: The model is inappropriate when the independent variables do not affect the dependent variables.*
>
> *H_1: The model is appropriate; when the independent variables do affect the dependent variables.*

Study findings in ANOVA table 4.25 indicated that the above-discussed coefficient of determination was significant as evidence of (Sig. F) ratio of 211.385 with a p-value of 0.000 <0.05 (level of significance), and the study accepted the alternative one. Therefore, the models used are appropriate. The following are the hypothesis for the direct relationship;

H_{05} predicted that there is no significant effect of the Biometric Authentication System on employee performance. However, the results presented in Table 4.25 below showed a positive and significant association between work scheduling and employee performance [$\beta = .421$, $p=0.00$, $\rho < 0.05$]. Therefore, the null hypothesis was rejected. This implies that the more a hospital adopts or engages in Biometric Authentication System as a way of time management aspect, the more they contribute to influencing employee performance. This implies that employee performance in private Hospitals in Uasin-Gishu is positively associated with work goal setting.

This implies that employee performance in private Hospitals in Uasin-Gishu County is positively linked with BAS. Furthermore, the results of the study in Table 4.25 are

consistent with the findings of the study done by Ali *et al*. (2018) on the relationship of Biometric Authentication systems with Performance, Job-Related Stress and Satisfaction of University Teachers in Pakistan, where the results of their study revealed a significant effect of Biometric AuthenticationSystem on employee performance.

$$\mathbf{y = 2.298 + 0.421}M_1$$

Where, y is employee performance; M_1 is Biometric Authentication System

4.9.3 Moderating Effect of Biometric Authentication System on the Relationship between Time Management practices and Employee Performance

Table 32

Hierarchical Regression for Effect of Biometric Authentication System on Time management practices and Employee performance

	Model 1	Model 2	Model 3
	B	B	B
(Constant)	1.029*(.110)	1.000*(.109)	1.032*(.114)
Predictor Variables			
Work planning	.061*(.032)	.066*(.032)	.076*(.031)
Work Organisation	.233*(.037)	.231*(.037)	.236*(.037)
Goal Setting	.127*(.038)	.098*(.039)	.097*(.046)
Work Scheduling	.301*(.032)	.264*(.035)	.233*(.038)
BAS		.071*(.026)	.084*(.029)
Work planning * BAS			-.141*(.039)
Work Organisation* BAS			-.132*(.044)
Goal Setting* BAS			.155*(.054)
Work Scheduling and Prioritization*BAS			.0370(.033)
Model Summary			
R	.861	.864	.874
R Square	.741	.747	.763
ΔR Square	.741	.006	.017
F Change	222.91	7.314	5.438
F Statistics	222.91**	183.4**	110.121**
[a] Dependent Variable: Employee Performance			

*Note: N= 317, BAS= Biometric Authentication System, Level of significance, *ρ< .05, **ρ< .01. Standard errors are given in parentheses. From the table above, all numbers are rounded to four decimal places*

Source: Survey Data, (2023)

Table 33 above relates the moderating effect of biometric authentication system on the relationship between time management practices and employee performance. The hierarchical regression results are presented for models 1 to 3. There was a significant interaction found by biometric authentication system on time management practices and employee performance, Model 3, [ΔR^2 = .017, ΔF (5.438), p=0.00, p < .05] and accounted for about 76.3% of the change in total variance in employee performance (R^2 =.763). Further, the model reported significant interaction terms and contributed to about 1.7% of the total variance in employee performance (ΔR^2 = 0.017). This shows that Biometric Authentication System is an important factor in enhancing time management practices (work planning; work scheduling; goal setting; work organization) in enhanceing employee performance. The hypotheses are as follows:

H_{06a} Stated that biometric authentication system does not moderate the association between work planning and employee performance. Nevertheless, the results showed that the biometric authentication system had a negative and significant moderating effect on the association between work planning and employee performance [β = *-.141*, p=0.00, ρ < 0.05].

Therefore, the null hypothesis was rejected. Implying that organization employee performance is reduced by 0.141 units when biometric authentication system is introduced as an interaction with work planning. Generally, employees contribute to planning by giving suggestions and test-driving the different strategies to get the best fit in an organization's strategy, resulting in increased performance. However, biometric

authentication system does not allow employees to contribute in its operation rather than to comply. This implies that even though the biometric authentication system weakens the relationship between work planning and employee performance, it stops employees from planning work to influence their effectiveness and eventually result in employee performance.

$H_0 6_b$ predicted that the biometric authentication system does not moderate the association between work organization and employee performance. Nevertheless, the results showed that the biometric authentication system had a negative and significant moderating effect on the association between work organization and employee performance [β = *-.132, p=0.00,* $\rho < 0.05$]. Therefore, the null hypothesis was rejected. This implies that even though the biometric authentication system weakens the impact of work organization on employee performance by 0.132 units. Work organization enhances time management through proper organization of activities within the workplace (Osawe, 2017). This means carrying out activities around priorities and goals will ensure proper organization of activities hence the reduced need of CEOs to spend more time in work organization but let the biometric authentication system to take the role.

$H_0 6_c$ stated that a biometric authentication system does not moderate the association between goal setting and employee performance. Nevertheless, the results showed that the biometric authentication system had a positive and significant moderating effect on the association between goal setting and employee performance [β = *.155, p=0.00,* $\rho <$ 0.05]. Therefore, the null hypothesis was rejected. This implies that biometric authentication system strengthens the relationship between goal setting and employee performance by 0.155 units. Goal setting enhances employee performs, since goal setting

guide work in an organization (Latham & Locke, 2019; Rainey & Jung, 2015).

Biometric authentication system involves the authentication of users in conjunction with usernames hence matching roles of individual as a result leading to effectiveness and efficiency.

$H_0 6_d$ predicted that the biometric authentication system does not moderate the association between work scheduling and employee performance. The findings depicted that the biometric authentication system had no significant moderating effect on the association between work scheduling and employee performance [β = .0370, p=*0.073, ρ> 0.050)*. Therefore, the null hypothesis was rejected. This implies that biometric authentication system strengthens the relationship between work scheduling and employee performance by 0.0370 units, however the relationship was not significant. Work scheduling is the expected time for an employee to be on the job and working (Doyle, 2020). In many cases, the employer will determine the time and set the number of days and hours per work. Work scheduling is always done with the aid of authentication system 'biometric' being one of them.

$$y= 1.032+ 0.076x_1 + 0.236x_2 + 0.097x_3 + 0.233x_4 + 0.084M_1 - 0.141x_1M_1 - 0.132x_2M_1 + 0.155x_3M_1 + 0.0370x_4M_1 + 0.144$$

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of study findings , conclusion and recommendations with reference to the specific research objectives namely to; evaluate the effect of work planning on employee performance in private Hospitals in Uasin-Gishu County, Kenya; examine the effect of work organisation on employee performance in private Hospitals in Uasin-Gishu County, analyse the effect of work goal setting on employee performance in private Hospitals in Uasin-Gishu County, examine the effect of work scheduling on employee performance in private Hospitals in Uasin-Gishu County and evaluate the moderating effect of Biometric authentication system on the relationship between time management practices and employee performance in Private hospitals in Uasin-Gishu county, Kenya.

5.2 Summary of the Major findings

The purpose of the study was to investigate the influence of time management practices on employee performance and the moderating effect of biometric authentication system on the relationship between time management practices and employee performance in private Hospitals in Uasin-Gishu County, Kenya.

The regression approach was used in formulating and testing the hypotheses. Furthermore, the hierarchical regression model 3 was used to test the moderating effect. F.W. Taylor's Scientific Theory guided the study, Organizational Theories of Henry Fayol and Marx Weber and the Adoption Approach model of ICT. The findings reported were obtained from 341 employees and 12 top management officers who exhibited varied demographic characteristics in terms of gender, age, years worked in the hospital

and their level of education. The researcher adopted these traits based on their expected roles in explaining the phenomenon under study.

Therefore, it was established that time management practices (work planning, work organisation, work goal setting and work scheduling) and Biometric Authentication System influenced employee performance. Lastly, the results revealed that; the relationship between time management practices (work planning, work organization, work goal setting and work scheduling) and employee performance was moderated by Biometric Authentication System. The theoretical foundation and empirical results based on study objectives and hypotheses formulated are discussed in detail as follows:

5.2.1 Relationship between Work Planning and Employee Performance

The study results reported a positive and significant effect between Work Planning and Employee Performance ($\beta = .483$, $\rho = 0.003$, $\rho < .05$). Generally, these findings suggest that work planning plays a positive and significant role in employee performance in private Hospitals in Uasin-Gishu County. Without proper planning of what to do at a time, an employee cannot coordinate his or her activities within the limited available time. Generally, planning involves the plan or pattern of the act that makes the company's main policies, goals and action systems unified into a whole. Therefore, planning methods empower managers to convert data into valued decisions and appropriate actions. However, Kinemo (2020) advocates for planning to involve developing objectives or the organisational strategic plans and looking for resources that would best suit the organisational goals outlined in strategic plans.

Each goal should have financial and human resource projections associated with its completion so that it becomes successful. The planning process also creates timelines for when the plans should be achieved. Planning also involves developing the tracking and

assessment method that will be used to monitor the project process.

5.2.2 Relationship between Work Organisation and Employee Performance

The study results reported a positive and significant effect between work organization and employee performance ($\beta = .556$, $\rho = 0.000$, $\rho < .05$). The findings suggest that work organization in hospitals is a significant determinant of employee performance in private Hospitals in Uasin-Gishu County. Therefore, for effective time management to take place, there must be a proper organisation of activities within the workplace (Osawe, 2017). This means carrying out activities around the priorities and goals that have been set. In this context, the absence of proper organisation results in wastage of business time. Therefore, there should be unity of command, which means that employees should receive orders from one superior at a time to enhance employee performance, which culminates in organisational performance. The reverse brings conflict, which is a time waster, and as a superior, set daily targets, maintain a time log, and avoid attempting too much at once.

5.2.3 Relationship between Work Goal setting and Employee Performance

The study results reported a positive and significant effect between Work Goal and Employee Performance ($\beta = .548$, $\rho = 0.000$, $\rho < .05$). Generally, these findings suggest embracing work goal setting in hospitals, specifically private hospitals in Uasin-Gishu County that enhances employee performance. According to goal setting theory, an employee performs better if the goals that guide work areclear, specific, and challenging rather than vague, ambiguous, and unchallenging (Latham & Locke, 2019; Rainey & Jung, 2015). Furthermore, the theory proposes that goals activate motivational mechanisms that stimulate performance. Four stimulating mechanisms are distinguished: direction, effort, perseverance, and strategy (Latham & Locke, 2019). Put simply, if you

know better what is expected of you, the course of action you should take to accomplish the objective becomes clearer and the chances that you will reach the goal increase. Lastly, goal setting enhanced self-efficacy through positive reinforcement and roused commitment, which in turn benefits future effort and performance (Bandura, 2012).

5.2.4 Relationship between Work Scheduling and Employee Performance

The study results reported a positive and significant effect between Work scheduling and Employee Performance ($\beta = .578, p=0.000, \rho < .05$). The findings of the study show that work scheduling and prioritisation significantly influence the performance of employees in private Hospitals in Uasin-Gishu County. Therefore, several types of work schedules vary based on the organisation and the position. In addition, some jobs have work schedules that change depending on the season. Therefore, it is important for a prospective employee to know the work schedule for the job before accepting it. This will help the employee avoid any surprises when they start work. However, Doyle (2020) describes some of the different work schedules available to employees that enhance employee performance, such as a full-time work schedule: A full-time work schedule often requires a commitment of 37-40 hours per week.

5.2.5 Relationship between Biometric Authentication System and Employee Performance

The study results reported a positive and significant effect between the Biometric authentication system and employee performance ($\beta = .421, \rho = 0.000, \rho < .05$). Generally, these findings suggest that the Biometric Authentication System has a significant effect on the performance of employees in private Hospitals in Uasin-Gishu County. Therefore, many institutions adopted biometric authentication systems to increase labour/employee work efficiency and workforce administration. In contrast to

those manual procedures, a biometric system of authentication is free from errors, accessible and accurate (Activenanda, 2016). Furthermore, most of the empirical studies (Mulumba, 2012; Ombogo, 2015) have shown a more positive relationship between biometric authentication systems, employee performance and organisational performance.

5.2.6 Moderating effect of Biometric Authentication System on the Relationship between Time Management Practices and Employee Performance

The sixth objective of the study was to establish the moderating effect of the biometric authentication system on the relationship between time management practices (work planning, work organisation, goal setting and work scheduling) and employee performance in private Hospitals in Uasin-Gishu County. The findings of the study revealed that biometric authentication systems partially moderate the relationship between time management practices (work planning, work organisation, goal setting and work scheduling) and employee performance. The relationship between work planning, work organisation, work goal setting, work scheduling and employee performance can be enhanced through the improvement of a biometric authentication system.

Generally, the study results reported a negative and significant moderating effect of the biometric authentication system on the relationship between Work Planning and Employee Performance (β = -*.141*, ρ = 0.000, ρ < *.05*). These findings suggest that the Biometric Authentication System has a significant moderating effect on the relationship between Work Planning and performance of employees in private Hospitals in Uasin-Gishu County. Furthermore, the study results also reported a negative and significant moderating effect of the biometric authentication system on the relationship between work organization and eemployee Performance (β = -*.132,* ρ < *.05*). These findings

imply that the Biometric Authentication System has a significant moderating effect on the relationship between Work Planning and performance of employees in private Hospitals in Uasin-Gishu County. In addition, the study results reported a positive and significant moderating effect of a biometric authentication system on the relationship between work goal setting and Employee Performance ($\beta = .155$, $\rho = 0.003$, $\rho < .05$).

Generally, these findings suggest that Biometric Authentication System has a significant moderating effect on the relationship between Goal setting and the performance of employees in private Hospitals in Uasin-Gishu County. Lastly, the study results reported no significant moderating effect of the biometric authentication system on the relationship between Work Scheduling and Employee Performance ($\beta = .037$, $\rho = 0.073$ $\rho > .05$). These findings suggest that Biometric Authentication System has no significant moderating effect on the relationship between Work Scheduling and performance of employees in private Hospitals in Uasin-Gishu County.

5.3 Conclusion

Grounded on the findings of the study, the following conclusions were made;

Work planning enables human resource departments in private hospitals to identify the need that requires attention and action to improve employee performance. Private hospitals need to enhance work planning initiatives to enable employees to achieve institutional goals which enhance employee performance. Private Hospitals which embrace work organisation as a time management practice enhance employee performance which culminates in organisational performance. Therefore, for effective time management to take place, there must be a proper organisation of activities within the workplace. Hence, the absence of proper organisation may result in wastage of business time. Therefore, there should be unity of command which means that

employees should receive orders from one superior at a time to enhance employee performance which culminates in organisational performance. The reverse brings conflict, which is a time waster, and as a superior, one is expected to set daily targets, maintain a time log, and avoid attempting too much at once.

Work goal setting is a significant concept that any hospital or institution that anticipates increasing the level of administrative staff employee performance and avoiding the disadvantages that come with turnover should embrace. Hospitals that practice work scheduling and prioritisation as part of time management enhance employee performance, specifically private Hospitals in Kenya. Therefore, the absence of goal ambiguity and the presence of goal clarity will lead to multiple positive outcomes for an organisation that will improve employee performance and, thus, overall organisational performance. However, the findings of the study also showed that work scheduling significantly influences the performance of employees. Therefore, several types of work schedules vary based on the organisation and the position. In addition, some jobs have work schedules that change depending on the season. Therefore, it is important for a prospective employee to know the work schedule for the job before accepting it. This will help the employee avoid any surprises when they start work and enhance performance through effectiveness and efficiency.

The use of biometric authentication systems in hospitals, specifically private hospitals, significantly and partially moderates the relationship between time management practices and employee performance. This implies that hospitals, specifically private hospitals which use biometric authentication systems, enhance time management practices like work planning, work organisation, work goal setting and work schedule. This culminates in enhanced employee performance which translates to an improvement

in entire organisational performance. This enables organisations to be more competitive in the market. A biometric authentication system, therefore, boosts employee potential at work and the dedication to work among employees and provides a base to promote dedicated workers. Therefore, organisations should adopt a Biometric authentication system to enhance their performance.

5.4 Recommendations of the Study

This section covered theoretical, practical, policy implications, limitations, and recommendations for further research.

5.4.1 Policy Recommendations

Based on the conclusions, the following recommendations were made;

First, Private hospitals should sensitize their employees on time management practices and their usefulness in improving their work performance. This dissemination can be done through planned trainings, seminars, and workshops. This enables them focus and prioritize on tasks which enhance their performance. The study indicates that time management practices to be adopted by employees include careful planning, organising work, and setting goals and work schedules to maintain high performance. Failure to do this may result in high levels of interruptions that could lower employee performance.

Second, from the study it is evident that work scheduling has the highest influence on employee performance. Thus, private hospitals should place more emphasis on this time management practice in enhancing employee performance as it in turn aids in improvement of organizational performance.

Third, Private hospitals need to give higher priority to biometric authentication systems because it is crucial in enhancing employee performance. They need to integrate biometric authentication system within time management practices in employees' day to day work in order to enhance their performance.

Fourth, the research revealed that the use of biometric authentication systems, i.e., biometric clocking system, improved employee performance as employees could not cheat on time, and so the level of attendance was improved. Thus, employees should be paid for time spent on the jobs, reducing staff complaints. This is because biometric authentication system positively moderates the relationship between time management and employee performance in the study.

This study has implications on private hospitals' management policy and human resources to facilitate achievement of time management practices by enhancing the use of biometric authentication systems, which results in improved employee performance. The study established a significant relationship between time management practices and employee performance. Considering this revelation, the study has aided in understanding the significant contribution of work planning, work organisation, work goal setting and work scheduling moderated by using a biometric authentication system to enhance employee performance in private hospitals.

Private hospital management should come up with good human resource policies on time management practices which should pay attention to work planning, organisation, goal setting and work schedule because they enhance employee performance.

Consequently, the private hospital management should formulate clear policies on the use of biometric authentication system in order to enhance employee performance. Furthermore, with global change catapulted by the outbreak of pandemics like the novel

COVID-19, hospital management needs to comprehend the programmes or practices that result in greater employee performance.

Hence private hospitals, based on their capability, should provide, and embrace programmes and policies that enhance time management practices inclined to employee performance. Furthermore, due to global competition, private hospitals need to focus more on employee performance through the enhancement of employee satisfaction feedback mechanisms, employee productivity, employee motivation and customer satisfaction aligned with human resource functions and policies to enhance employee performance.

5.4.2 Recommendation for Further Research

The research study was not without limitations, some of which provide an avenue for future research. First, the study focused only on a few aspects of time management, linking it to employee performance. Other factors that influence time management should be looked at in the future. Second, future studies may examine various methods of measuring time management dimensions. Thirdly, since the study was cross-sectional, future scholars may use a longitudinal approach to understand the moderating effect of biometric authentication systems on the relationship between time management and employee performance in hospitals in Kenya. Lastly, even though not included in our study, environmental variables and firm characteristics could affect employee performance. Finally, the study collected data on time management and employee performance from the private hospital staff as single respondents. Future research should engage other top management staff, such as the CEOs and the owners of the private hospital, using a three, sixty approach.

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APPENDICES

Appendix I: Introduction Letter

Dear Respondent

I am a student in the School of Business at Kabarak University, pursuing a PHD degree in Human Resource management; I am conducting a research on **Time management and Employee performance in private hospitals in Uasin-Gishu County, Kenya.** The purpose of the study is to obtain data for academic use only and only employees of the hospital will be involved. Thestudy procedures will involve responding to questionnaires and will not in any way jeopardize your job security or harm you in any way. I am therefore requesting you to complete the following questionnaire and return to me.

All information given will be treated with utmost confidentiality. Do not indicate your name anywhere on the questionnaire.

Yours faithfully

Dorcas Kandie

GDM/M/1134/09/140722 870 610

Appendix II: Questionnaire

1. Hospital name
2. Status ownership of your institution

Instruction

Fill in the needed information in the blank space provided or put a tick

(√) beside the box.Strongly Agree (5) Agree (4) Undecided (3)

Disagree (2) Strongly Disagree (1) Strongly Disagree (5)

Section A: Personal Information

1. Gender Male () Female ( )
2. What is your age ( )
3. For how long have you served in the Hospital ( )
4. Indicate your highest level of education
   a) Bachelor's Degree ( )
   b) Master's Degree ( )
   c) Diploma ( )
   d) Higher Diploma ( )
   e) High School ( )
   f) Certificate ( )
   g) CPA PART III ( )
5. Indicate your current official position in this Hospital

Section B: Work Planning

Please indicate the degree to which you agree with each of the following statements

KEY: 5- Strongly Agree 4- Agree 3-Undecided 2-Disagree 1-Strongly Disagree

Statements of Work Planning	**5 (SA)**	**4 (A)**	**3 (U)**	**2 (D)**	**1 (SD)**
1. The hospital employees keep a daily list of things to do					
2. The need for effective performance makes planning oftime for employees a necessity					
3. Planning for time management makes employees worksmarter and efficient					
4. In this hospital employees are aware of the importance of planning for time available to do a task					
5. Planning helps healthcare workers more conscious oftheir duties and responsibilities					
6. Hospital employees possess essential time managementskills					
7. Employees at these hospital control personal and hospital time to complete tasks					
8. Employees working in the hospital have different skillsand strategies for time management					
9. Employees in the hospital participate in the planning process					

Section C: Work Organisation

Please indicate the degree to which you agree with each of the following statements

KEY: 5- Strongly Agree 4- Agree3-Undecided 2-Disagree 1-Strongly Disagree

Work Organisation	**5 (SA)**	**4 (A)**	**3 (U)**	**2 (D)**	**1 (SD)**
1. There is adequate cooperation among employees of the Hospital					
2. The hospital has standards for breaking down complex tasks into simple tasks					
3. The hospital employees organize paper work					
4. Duties and responsibilities are delegated to save time					
5. Employees are well informed on who is responsible for What					
6. Adequate authority is given to employees to enabledecision-making on delegated work					
7. There are clear lines of communication at the workplace					
8. The hospital structure of the hospital is clear to all Employees					
9. Each supervisor has the right number of employees who report to her or him					

Section D: Work Goal Setting

Please indicate the degree to which you agree with each of the following statements

KEY: 5- Strongly Agree 4- Agree 3-Undecided, 2-Disagree 1-Strongly Disagree

Goal Setting	**5 (SA)**	**4 (A)**	**3 (U)**	**2 (D)**	**1 (SD)**
1. Employees at this hospital have clear, specific and challenging work goals					
2. Employees at this hospital set short-term goals to help achieve long-term goals					
3. The hospital sets datelines for each task					
4. The employees feel they have the capacity to do their jobs					
5. The hospital has goals set for every department					
6. Adequate time is allocated for employees to complete their work					
7. Setting goals saves time					
8. Setting goals enhances probability of success					
9. All tasks are accountable in terms of time allocated					

Section E: Work Scheduling

Please indicate the degree to which you agree with each of the following statements

KEY: 5- Strongly Agree 4- Agree3-Undecided 2-Disagree 1-Strongly Disagree

Work Scheduling and prioritizing	**5 (SA)**	**4 (A)**	**3 (U)**	**2 (D)**	**1 (SD)**
1. The hospital has mechanisms for re-scheduling wasted Time					
2. The hospital has policies to avoid interruptions that waste time					
3. The hospital employees write reminder notes to achieve efficiency					
4. The hospital employees prioritize tasks					
5. The hospital has policies on setting priorities for tasks					
6. The hospital has mechanism to review activities					
7. There are clear methods of work scheduling					
8. Work scheduling is aimed at saving time					
9. Supervisors ensure that there is no work overload for Employees					

Section F: Employee Performance

Please indicate the extend or level to which you agree with each of the following statements

KEY: 5 - Very large extent4 - Large extent3 - Some extent2-Small extent 1-Not at all

Employee satisfaction	**5 (VLE)**	**4 (LE)**	**3 (SE)**	**2 (SE)**	**1 (NA)**
1. To what extent do you agree that employees are satisfied with the reward system at the hospital?					
2. To what extent do you agree that employees are satisfied with the way their complaints are handled?					
3. Indicate the extent to which you agree that employee are happy about the way they are managed					
4. To what extent do you agree that there is good relationship between the employees and other supervisors?					
5. Indicate the extent to which you agree that there is ahigh level of self-esteem among employees					
6. To what extent do you agree that employees feel that the employer trusts them?					
Employee Productivity	**5 (VLE)**	**4 (LE)**	**3 (SE)**	**2 (SE)**	**1 (NA)**
1. Indicate the extent to which you believe that employees are satisfied with the reward system atthe hospital					
2. To what extent do you believe that employee are satisfied with the their complaints are handled					
3. Indicate the extent to which you believe that employee are happy about the way they are Managed					

4. To what extent do you believe that there is good relationship between the employees and othersupervisors					
5. Indicate the extent to which you believe that there isa high level of self-esteem among employees					
6. To what extent do you believe that employees feel that the employer trusts them					
Employee Motivation	**5 (VLE)**	**4 (LE)**	**3 (SE)**	**2 (SE)**	**1 (NA)**
1. Employees are highly motivated since promotion is based on merit					
2. There is competitive remuneration of employees which enhances employee's motivation					
3. Employees at every level are motivated to perform at higher level					
4. Employees are committed to their work					
5. Motivation of employees is enhanced through Teamwork					
6. The existence of clear career progression in the hospital motivates employees					
Customer satisfaction	**5 (VLE)**	**4 (LE)**	**3 (SE)**	**2 (SE)**	**1 (NA)**
1. To what extent do you agree that employees fulfil and even exceed customers‟ expectations					
2. Indicate the extent to which you believe that employees respond quickly to customers complaints					
3. To what extent do you agree that employees practice continuous quality improvement in service provisionin line with changing customer preferences					

4. Indicate the extent do you agree that there is continuous improvement in employees service provision in line with changing customer preferences					
5. Indicate the extent to which you agree that employees customer service skills are improved					
through continuous customer care training to serve customers better					
6. To what extent do you agree that employees listen tofeedback of all kinds from customers					
7. Indicate the extent to which you agree employees standards of service has led to customer loyalty					
8. Indicate the extent to which you agree that employees meet goals set in the area of customerservice					

Section G: Biometric Authentication System (BAS)

Please indicate the degree to which you agree with each of the following statements

KEY: 5- Strongly Agree 4- Agree3- Undecided 2-Disagree 1-Strongly Disagre

Biometric Authentication System	**5 (SA)**	**4 (A)**	**3 (U)**	**2 (D)**	**1 (SD)**
1. Biometrics ensure staff are conscious of the value of time at work					
2. Biometrics authentication ensures staff report on and leave work on time					
3. Biometrics have improved patient identification					
4. Biometrics have enhanced security of patients‟ records and other records in the hospital					
5. The use of biometrics has reduced fraud					
6. Biometrics have enhanced privacy of patients					

7. Biometrics are useful in emergency cases where patients maybe in a position not to identify Themselves					
8. Use of BAS has improved employee sensitivity to use of time productively					
9. Employees understand the purpose of using BAS					

Appendix III: Interview Schedule

Time management and employee performance in Private hospitals in Uasin-Gishu County

Section A: Information about the institution

1. Gender Male ( ) Female ( )
2. What is your age? ……..…..
3. Years spent at the institution ……..
4. Position held in the institution ……..……

Section B: Time Management Practices

Please indicate which of the following time management practices have beenimplemented by your institution.

Planning	
Goal setting	
Delegation	
Work scheduling	
Prioritization	

Section C: Strategies implemented in the hospital

Which of the following strategies are implemented in your hospital to enhance employee performance?

-Clear communication expectations

-Consistent Performance appraisals

-Use of right technologies like Biometric Authentication System

What is the effect of work planning on employee performance in private hospitals in Uasin Gishu County?.....

What is the effect of work Organisation on employee performance in private hospitals inUasin Gishu County? .....
.....

What is the effect of work goal setting on employee performance in private hospitals in Uasin Gishu County? .....
.....

What is the effect of work scheduling on employee performance in private hospitals in Uasin Gishu County? .....

Are there any recognizable/explicit time management strategies being implemented by yourinstitution? If so, please name them…….....

In your view, what activities are implemented in respective of each of the time managementpractices indicated above as taking place at institution?

.....…….....……

Section D: Key Aspects of Employee Performance

Has the institution realized high employee performance? Explain why/why not.

……

Comment on the mechanisms of enhancing employee performance at your institution at yourinstitution.

……

Employee performance is realized through the following aspects: Employee job satisfaction, Employee productivity and Customer satisfaction. Which of these do you consider critical and why?

……

Explain some strategies/activities implemented by your institution to enhance employee performance……..

How has Biometric Authentication Technology enhanced employee performance in your institution?.....

Section E: Relationship between time management and employee performance

Comment on the relationship between time management and employee performance in the healthcare context…….

In your view, is the relationship between time management and employee performance dependent on other factors? Please explain your answer

……...……

Do you think there is a linkage between time management, biometric authentication andemployee performance? Please explain your answer

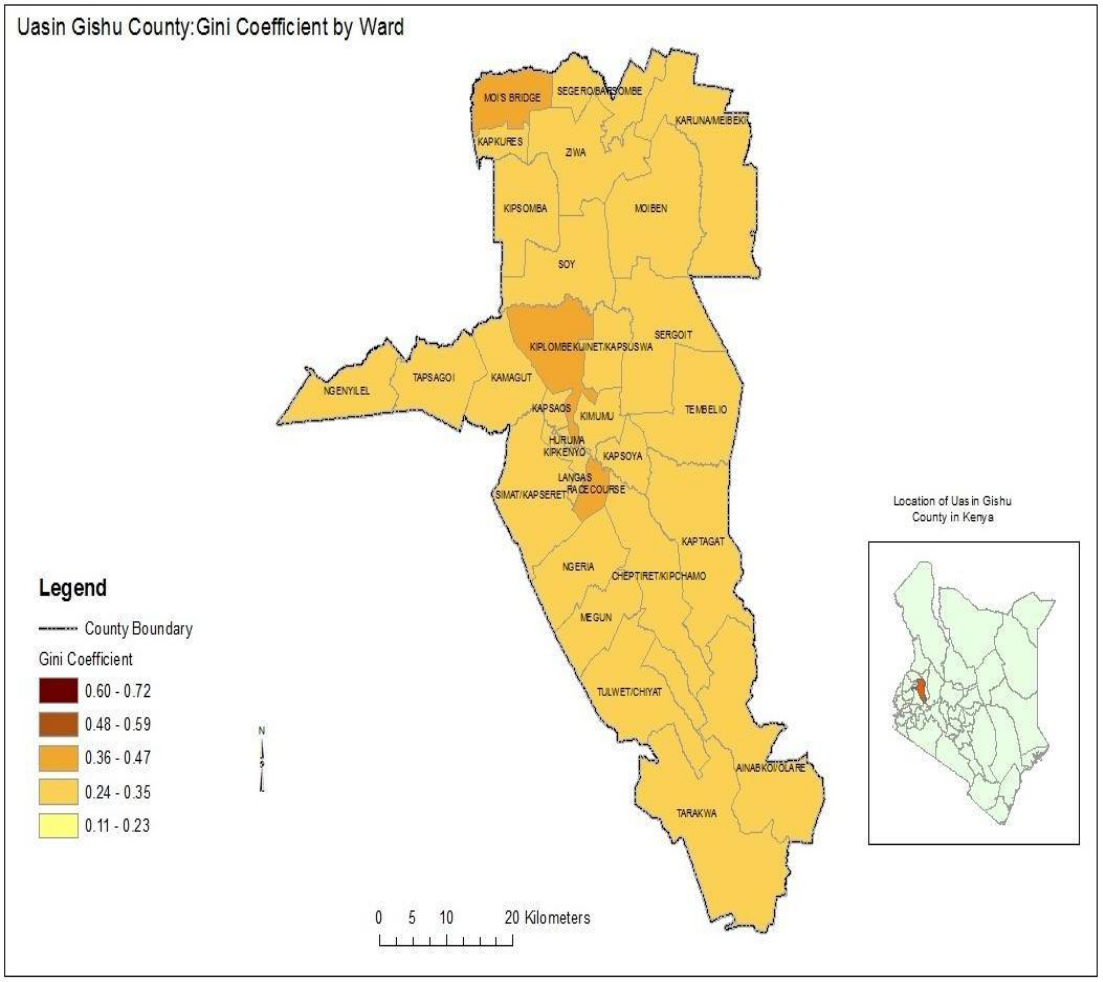
……

If so, suggest those dimensions which represent that linkage

……

Thank You for Your Time

Appendix IV: Map of Uasin-Gishu County



Appendix V: NACOSTI Authorization Letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/21239/31540**

Date: **25th July, 2019**

Dorcas Kandie
Kabarak University
Private Bag - 20157
KABARAK.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"The moderating effect of biometric authentication systems on the relationship between time management and employee performance in hospitals in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Uasin Gishu County** for the period ending **23rd July, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Uasin Gishu County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Proceed.
COUNTY COMMISSIONER
UASIN GISHU COUNTY

Copy to:

The County Commissioner
Uasin Gishu County.

The County Director of Education
Uasin Gishu County.

Proceed
FOR COUNTY DIRECTOR OF EDUCATION
UASIN GISHU COUNTY

Appendix VI: NACOSTI Research Permit

THIS IS TO CERTIFY THAT:
MS. DORCAS - KANDIE
of KABARAK UNIVERSITY, 0-30400 KABARNET,has been permitted to conduct research in *Uasin-Gishu County*

on the topic: *THE MODERATING EFFECT OF BIOMETRIC AUTHENTICATION SYSTEMS ON THE RELATIONSHIP BETWEEN TIME MANAGEMENT AND EMPLOYEE PERFORMANCE IN HOSPITALS IN KENYA*

for the period ending:
23rd July,2020

Permit No : NACOSTI/P/19/21239/31540
Date Of Issue : 25th July,2019
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
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CONDITIONS: see back page

Appendix VII: List of Publications

Journal of Policy and Development Studies

[ISSN 2664-9462]
Volume: 04 Issue: 01 | Sept-2022

JPDS

Effect of work planning on employee performance in private hospitals in Uasin-Gishu County, Kenya

Authors
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Cite this article in APA
Kandie, D., & Kipkelwon, S. K. (2022). Effect of work planning on employee performance in private hospitals in Uasin-Gishu county, Kenya. *Journal of policy and development studies*, 4(1), 42-49. https://doi.org/10.51317/jpds.v4i1.252

OPEN ACCESS
A publication of Editon Consortium Publishing (online)

Article history
Received: 16.06.2022
Accepted: 18.09.2022
Published: 30.09.2022

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Abstract
This study aimed at examining work planning's effect on employee performance in Private Hospitals in Uasin-Gishu County, Kenya. An Explanatory research design approach was adopted. The study population consisted of all 2,298 employees of 31 private hospitals in Uasin-Gishu County, Kenya. A sample of 317 was utilised for the study. The data was collected with the aid of a self-administered questionnaire. Descriptive and inferential statistics did the data analysis with the aid of SPSS software. The hypothesis was tested through the entry regression analysis technique. Evidence obtained from the analysis confirmed work planning (($\beta = .483, \rho < 0.05$) had a positive and significant effect on employee performance. Based on the findings, the study recommends that private hospitals consider work planning to enhance employee performance and overall organisation performance. The framework builds on the important themes of employee performance and shows their relevance in practice through work planning. Thus, the study partly contributes to the inconclusive debate on time management practices and employee performance nexus by arguing that work planning, a dimension of time management practices, has a direct effect on employee performance which is more important in enhancing organisational performance.

Key terms: Work planning, organisation performance, time management practices.

Journal of Business and Entrepreneurship

[ISSN 2957-6466]
Volume: 01 Issue: 01 | Aug-2022

JBE

Effect of work scheduling on employee performance in private hospitals in Uasin-Gishu county, Kenya

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Cite this article in APA
Kandie, D., & Chepkilot, R. (2022). Effect of work scheduling on employee performance in private hospitals in Uasin Gishu county, Kenya. *Journal of business and* entrepreneurship, 4(1), 157-163. https://doi.org/10.51317/jbe.v4i1.250

OPEN ACCESS
A publication of Editon Consortium Publishing (online)

Article history
Received: 23.07.2022
Accepted: 1.08.2022
Published: 19.09.2022

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Abstract
The paper sought to examine the effect of work scheduling on employee performance in private hospitals in Uasin-Gishu County, Kenya. A survey research design approach was adopted. The study population consisted of all the licensed private hospitals in Uasin-Gishu County, Kenya. However, Out of the total 2,298 permanent employees of 31 private hospitals, a sample of 341 was selected based on Yamane (1967) procedure. A self-administered questionnaire was adopted for data collection. Data were then analysed through descriptive and inferential statistics. The hypotheses were tested through the entry regression analysis technique. Evidence obtained from the analysis confirmed a positive effect of a strong statistically significant positive relationship between work scheduling and employee performance in selected private hospitals in Uasin-Gishu County, Kenya ($p = .001$, $b = 0.578$, $t = 22.416$, $p < .01$). This study concludes that hospitals that practice work scheduling and prioritisation as part of time management practice enhance employee performance, specifically private Hospitals in Uasin-Gishu County, Kenya. The ministry of health should develop specific policies that incorporate time management practices to enhance employees' performance in hospitals. Based on the findings, the study recommends that private hospitals consider work schedules to enhance employee and overall organisation performance. Thus, the study contributes to the inconclusive debate on time management practices as nexus as a strategic resource for employee performance.

Key terms: Work scheduling, employee performance, time management practices.

Appendix VIII: Evidence of Conference Participation

KABARAK UNIVERSITY

Certificate of Participation

Awarded to

Dorcas Kandie

for successfully participating in the Kabarak University International Research Conference on Business and Economics held from 11th -12th October 2022 and presented a paper entitled ***"Effect of Work Planning on Employee Performance in private Hospitals in Uasin Gishu County, Kenya."***

Conference Theme

Global Trends in Trade Investments and Growth

Dr. Patrick Kibati
Dean, School of Business and Economics

Dr. Miriam Muga
Ag. Director Research, Innovation and Outreach

Kabarak University Moral Code

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord.

(1 Peter 3:15)

Kabarak University is ISO 9001:2015 Certified

Appendix IX: Correlation Matrix

Work Planning			Work Organisation	Goal Setting	Work Scheduling and Prioritization	Productivity	Motivation	Customer satisfaction	Biometrics	Time management practices	Employee satisfaction	Employee performance
Work planning	Pearson Correlation	1	.580**	.645**	.556**	.607**	.502**	.392**	.440**	.802**	.360**	.603**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Work Organisation	Pearson Correlation	.588**	1	.749**	.732**	.688**	.468**	.598**	.581**	.905**	.624**	.796**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Goal Setting	Pearson Correlation	.652**	.749**	1	.556**	.677**	.495**	.529**	.572**	.860**	.408**	.685**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Work Scheduling and Prioritization	Pearson Correlation	.565**	.732**	.556**	1	.710**	.447**	.425**	.637**	.841**	.715**	.784**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Productivity	Pearson Correlation	.614**	.688**	.677**	.710**	1	.457**	.371**	.622**	.787**	.641**	.826**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000

N		317	317	317	317	317	317	317	317	317	317	317
Motivation	Pearson Correlation	.504**	.468**	.495**	.447**	.457**	1	.621**	.349**	.558**	.212**	.703**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Customer satisfaction	Pearson Correlation	.392**	.598**	.529**	.425**	.371**	.621**	1	.328**	.571**	.254**	.704**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Biometrics	Pearson Correlation	.436**	.581**	.572**	.637**	.622**	.349**	.328**	1	.653**	.564**	.634**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Time management practices	Pearson Correlation	.812**	.905**	.860**	.841**	.787**	.558**	.571**	.653**	1	.624**	.844**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	317	317	317	317	317	317	317	317	317	317	317
Employee satisfaction	Pearson Correlation	.362**	.624**	.408**	.715**	.641**	.212**	.254**	.564**	.624**	1	.768**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	317	317	317	317	317	317	317	317	317	317	317
Employee performance	Pearson Correlation	.607**	.796**	.685**	.784**	.826**	.703**	.704**	.634**	.844**	.768**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	317	317	317	317	317	317	317	317	317	317	317

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